www.istonline.org.uk

THE Tech Magazine

THE MAGAZINE OF THE IST

ISSN 2753-9024 • Vol 5 No 2 • Nov 24

The Heroes Behind the Skies

The Unsung Experts Keeping Airplanes Airborne and Safe

IST

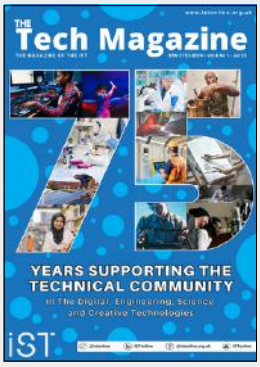
@istonline ISTonline @istonline.org.uk ISTonline

THE Tech Magazine

The magazine for, and made by, the technical community.

THE Publications
THE Publications
THE Publications

PUBLICATIONS: The Journal | The Tech Magazine | The Bulletin



The IST **eNewsletter** has evolved in both design and substance, transitioning from a conventional newsletter to a recognised magazine over the past seven years. We are grateful for all the uplifting feedback we've received. The content has resonated well, showcasing the diverse technical workforce across various sectors. With the ambition to elevate this initiative, we've transformed it into **The Tech Magazine**. This move is designed to empower technicians with a platform for their contributions and to ensure the technical community is accurately depicted. Our goal is to continually refine our publications to support your professional and career development. We welcome any feedback or thoughts you may wish to share.

IST members can contribute with articles of interest / opinion pieces or research and information blogs. Members can advertise their projects, awards, or even advertise or offer an advert for their organisation. Below are some of the contents topics in our magazines:

MAGAZINE WALL OF CONTENTS

UPDATES & NEWS | INDUSTRY | BUSINESS

RESEARCH INSTITUTES | CONSULTANCY

COLLEGES | HIGHER EDUCATION | SCHOOLS

#TECHNICIANJOURNEY | AWARDS

E-ARTICLES | CREATIVE | ENGINEERING

SUSTAINABILITY | DIGITAL | SCIENCE

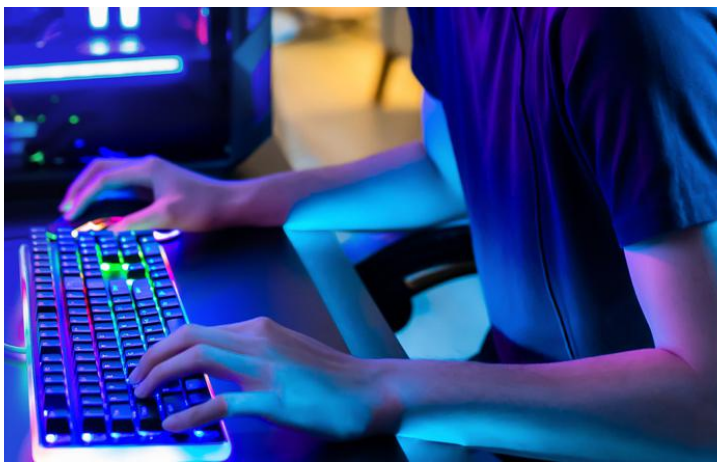
OUTREACH | ENGAGEMENT | DEI

TRAINING & RESOURCES | CPD CORNER

EVENTS | ARCHIVE | CROSSWORD

THE TECHNICAL COMMUNITY

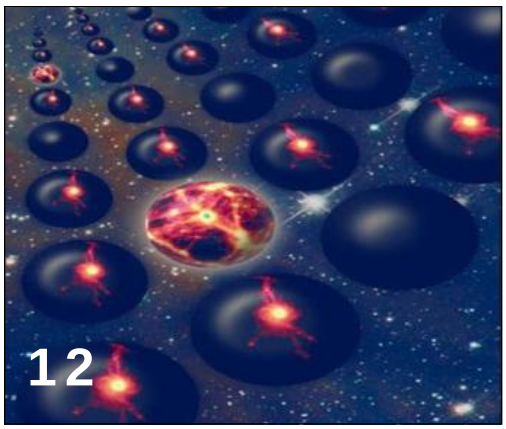
Giving technicians the visibility & recognition they deserve



CONTENTS

Women in Science & Engineering event hosted by WISE

WELCOME TO YOUR MEMBERSHIP MAGAZINE



@istonline | ISTonline | www.facebook.com/istonline.org.uk | istonline.org.uk

iST®

Volume 5 Number 2
Nov 2024

This magazine is made for, and made by, the technical community.

CALL TO MEMBERS:
If you would like to publish an article or are interested in joining the team, contact us at the office, we would love to hear from you.

For details contact
office@istonline.org.uk

Advertising in The Tech Magazine is given to our members free of charge. We have advertising offers available to non-members and anyone interested.

To advertise in this magazine, contact
office@istonline.org.uk

Membership & Subscription Enquiries:
memberships@istonline.org.uk

The Tech Magazine is produced on behalf of the Institute by AI Group.

Views expressed in this magazine are not necessarily those of the Editorial Board or the Institute.

Image Credit: WISE - Women in Science & Engineering event in London, hosted by WISE

Cover image: 'The Heroes Behind the Skies'.

Thank you for everyones contribution to this edition of the magazine.

We would love to hear your views on the Magazine and learn more about what you would like us to include in the future. Please feel free to send us your thoughts via office@istonline.org.uk.

Welcome

CHAIR'S MESSAGE

Terry Croft MBE, CSci FIScT
IST Chair

"The IST is run by technicians for technicians so, join one of our teams and play your part. Contact: office@istonline.org.uk"

Welcome to your latest edition of The Tech Magazine. Since our last publication in May, so much has changed. We have a new Government, still early days, so the jury is still out on how they will perform, and they have started to initiate and implement some of their manifesto policies. We will be monitoring that space to keep abreast of changes and new initiatives that may affect our members and the technical community over the coming months and years. One key area that the IST focuses on, is training and development, including career pathways and related upskilling. One example of where we are currently monitoring these changes, is the recent DfE review of apprenticeships and the IfATE and whether the new Government intend to make further changes. This is an important area in early career development and the IST supports both students, apprentices and trainees as they learn and move forward in a technical career and help them prepare for Professional Registration. This is part of our mission to support the professional technical workforce in every stage of their lifetime careers.

A very pleasant change since May has been the weather! Instead of the relentless days of rain, we have had brilliant summer weather, which certainly lifts the spirits. Over this period of time, our dedicated volunteers at the IST have been working hard on many projects, supporting technicians as they have been applying for professional

registration and representing your interests at national meetings and international events. Volunteers play key roles in a number of specialist groups or teams. These specialist groups have brought on board the highly successful AI Professional Register, and the Creative Industries and Technologies Register. I would strongly encourage both our members and non-members to look into gaining professional accreditation and the recognition you deserve. Information about all the professional frameworks that we award can be found at our website.

The Women in Tech Group have been very active and have given a variety of webinars and talks and have been invited to attend events both nationally and internationally. I encourage you to take a look at their web pages on the IST website as many interesting webinars and talks are scheduled for the rest of the year. Even better why not join one of the groups, you'll be surprised how stimulating and beneficial they are.

A mention must also be given to the IST Conference '24 team. These volunteers devoted their time to ensure this year's conference was of the highest quality and had an exciting programme to match the successful IST conferences of previous years. Many congratulations to those who entered the image competition this year and congratulations to James Fox and Murray Webster who were awarded their Fellowships.

A final thank you goes to the fantastic sponsors, exhibitors, and career zone supporters whose contributions made the conference such a success. A big thanks also to everyone who attended—we hope you enjoyed the day as much as I enjoyed connecting and catching up with colleagues. We're excited to announce that planning for the next conference, to be held in 2025 at the University of Birmingham, will begin soon. We can't wait to share the exciting content we have in store!

As you will see, the Tech Magazine is more than just a publication; it is a platform for technicians, from the start of their career to becoming advanced practitioners, senior managers and specialists, to share their work, ideas and thoughts with our members and the technical community at large. I encourage you to engage with our work and submit and article or paper for future publication. J-P and his team will guide you all the way to publication. I encourage all of our members to contribute to future publications.

With best wishes,

Terry.

If you have any ideas or suggestions on how we can enhance your The Publications, let one of our team members know.

Editor’s Welcome

JP Ashton-Kinlin, RSci FIScT
Editor / IST Marketing and Development Officer

“A big thank you to everyone who contributed to this edition!”

Dear Readers,

First and foremost, I’d like to extend my sincerest apologies for the slight delay in releasing this edition. We wanted to ensure that a few important member articles were included, which I believe you'll find well worth the wait.

The IST Conference at Lancaster this past September was a tremendous success! A heartfelt thank you to our sponsors, exhibitors, and speakers for their invaluable contributions in making it a memorable event. Look out for the next Journal edition, we will have some exciting features to share, including coverage of the conference highlights.

We have an eclectic mix of articles for you this time around. Dive into the world of creative practice, explore the tamper-resistant and decentralised nature of blockchain, and learn how Germany is pioneering its use to manage asylum seekers—could this be the key to transforming international cooperation? We also have thought-provoking pieces on the anthropic principle and practical tips for approaching academic writing, useful for both new and seasoned professionals.

We also have thought-provoking articles, including “Can AI Take Over Writing?” by Dr. Alicia Colson from the IST AI Group, and “The Landscape of Professional Registration and Its Impact on the Wider Technician Commitment” by Laurence Dawkins-Hall. A big thank you to everyone who contributed to this edition!

In this edition, we’re also thrilled to introduce a special spotlight feature, where we showcase standout individuals from the technical community. Don’t forget to nominate members for future spotlights, as it’s a great way to celebrate their achievements. As always, this issue is packed with member news, updates from our network groups, and sector news to keep you connected and informed.

As always, we encourage you to engage with our content, whether through the magazine or on social media (though we recognise that our social platforms are still evolving). Many technical staff we encounter through the IST tend to underestimate their value and question their ability to contribute to IST publications. We strongly believe otherwise. Our goal is for The Tech Magazine, and all of our communication channels, to be inclusive and welcoming to all our members and the wider technical community. This publication plays a vital role in giving those at the start of their careers a chance to break into the world of publishing.

I’m truly excited to bring you this new volume of The Tech Magazine, and I look forward to hearing your thoughts on the articles and insights we’ve gathered. Thank you for your ongoing support and engagement. Here’s to another inspiring issue, packed with innovation and collaboration!

Warm regards,

J.P. AK

- You can read the Papyrus Article on Page 40 -

- Visit the Science Council Website at www.sciencecouncil.org -

Revolutionising Asylum Procedures:
How Blockchain is Transforming the German Asylum System

Dinesh Chacko

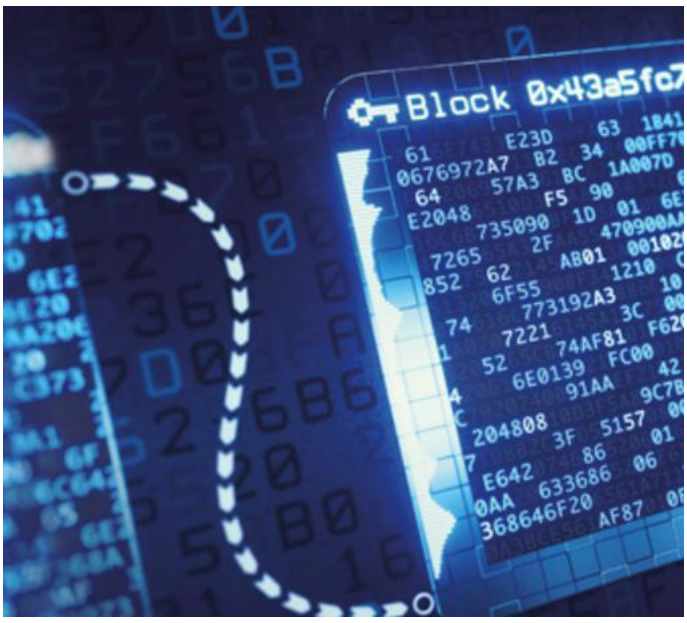
Blockchain is tamper-resistant and decentralised; Germany is pioneering its use to manage asylum seekers – could this ultimately transform international cooperation?

In 2018, Germany began trialling a ground-breaking solution to overcome the difficulties of keeping accurate records of the progress of asylum seekers' applications, namely the location of the asylum seeker and how far along they were in the system.

Why Germany?

As of last year, Germany hosted some 2.51 million asylum seekers, behind only Iran (3.44 million) and Turkey (3.37 million) in number **(1)**. For the last four years, numbers of individuals seeking asylum in Germany have soared – in 2023 reaching nearly 352,000, up more than 100,000 the previous year **(2)**.

As a federal republic, the German states or "Bundesländer", of which there are 16, must liaise between other federal and local authorities to keep up to date about the progress on individual asylum cases and share information about the applicants and the status of their claims. However, this is problematic: while there's a joint central database – the "Central Register of Foreigners" to store certain details, there's no overarching system covering the asylum process. Most local and federal authorities tend to use their own IT systems to administer their responsibilities, but these are unable to communicate seamlessly. When an individual seeks asylum in Germany, many different authorities are involved, from preliminary reception centers up to federal immigration authorities. Often, officials will exchange hard copies of documents or send excel files by email. Communication and the exchange of information between local and federal authorities is cumbersome and time consuming – and mistakes creep in. One may ask "why can't these duties be undertaken by existing workflow management systems?". Existing workflow systems often automate workflows, but the automation of shared duties across different federal authorities is prohibited.



Why blockchain?

Blockchain, an indelible, tamper-resistant and decentralised ledger, offers an efficient means to store and share information on the status of asylum claims, German officials believe. Blockchain is better known as the distributed database technology that underpins cryptocurrencies such as Bitcoin, Ethereum and more. It manages and stores data in a chronological chain from a network of participants and doesn't require oversight by a central authority. New blocks might be created every few seconds, making the chain almost impossible to compromise.

There are a variety of blockchain technologies, and new solutions allow different organisations to share and manage a range of processes. And this allows for swifter, almost real time, and transparent sharing of information among authorities, paving the way for greater digital coordination at a national and potentially international level. Blockchain could be the perfect solution to keep track of asylum seekers across the country, the German government believes. The tamper-resistant nature of blockchain make this a trusted vehicle for information and procedures.

What stage is the project?

Germany's Federal Office for Migration and Refugees successfully piloted an Ethereum based blockchain technology with restricted read and write permissions in the first half of 2018.

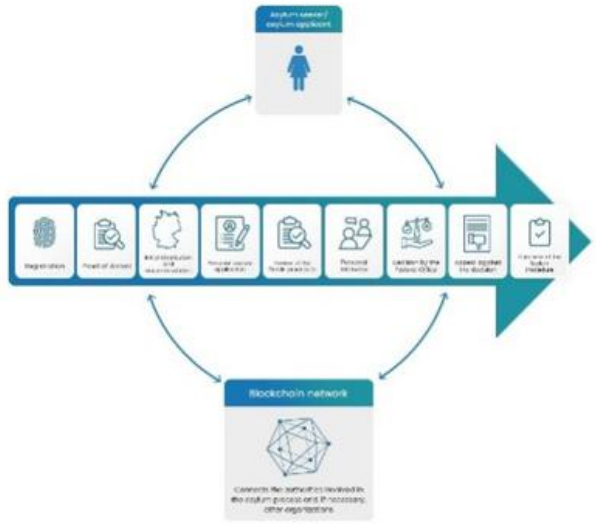


Diagram of the asylum process in Germany.

The figure above shows a diagram of the key steps of the general asylum process that was tested in the pilot project. The objective of the Dublin Regulation is to determine which single, clearly determined EU country is responsible for ensuring quick access to the asylum procedures and the examination of an application on its merits. A more detailed description of the German asylum procedure can be found in "The stages of the German asylum" brochure by the Federal Office for Migration and Refugees.

Since 2021, a blockchain infrastructure called FLORA is being piloted at an asylum arrival facility in Dresden. Germany has chosen the blockchain 'Hyperledger Fabric' over 'Ethereum' due to its privacy and organisational features. Current plans aim to allow multiple users to use the cloud-based technology. An evaluation of FLORA shows that blockchain limits the number of mistakes, cuts the need for manual input and brings greater transparency.

Immigration authorities have developed a prototype based on blockchain technology that creates digital certificates for asylum seekers, who can hold them via an app or paper version. This combats the difficulties faced by displaced individuals who, without the requisite paperwork, can't benefit from asylum services. Officials are seeking to evaluate how far blockchain technology's property as transparent register for digital identities can aid the asylum system and how far it boosts security against forgery. Smart contracts could also be used to automate certain procedures to improve cooperation between different authorities.

These proof-of-concept projects have shown that blockchain makes the asylum procedure more reliable, transparent and efficient. Early pilots have also helped project managers begin to develop a blockchain solution that could meet data protection requirements.

How will a solution meet data protection rules?

Regulatory uncertainties are dogging the use of blockchain as a tool for managing asylum processes. This is, in part, because of personal data privacy and security requirements outlined by GDPR (General Data Protection Legislation), which governs how individuals' data within the EU may be used, processed and stored. GDPR poses three challenges: responsibility for compliance must be defined and designated; GDPR prohibits storage and processing of personal data unless this follows certain regulation; individuals have the right to rectify or erase personal data. To get around these requirements, German authorities have made two fundamental modifications to the architecture. Firstly, a new privacy service enables officials in each authority to attribute updates to the processes; secondly, a separate update concept allows authorities to submit a rectification transaction to the blockchain. To cover requirements to erase the on-chain data, this data can be anonymised on the blockchain to delete the mapping in the privacy service, which deletes the data trail. Only selected status updates may be stored on the blockchain.

What now?

This is a lighthouse project, if successful it could pave the way for the use of blockchain in other areas of federal government.

What could go wrong?

In Germany, the technology is still under development and experts must prove it's robust and can be maintained and rolled out at scale. Ensuring the technology meets GDPR requirements remains a challenge and requires more work.

Credit:

IT-Labs: Article - What is GDPR and how does it affect software companies?

An illustration of key rules about data processing and conditions.

Is blockchain suitable elsewhere in Europe and beyond?

This project could feed into wider European initiatives to improve coordination across borders and create a European infrastructure. Within the asylum context, blockchain could herald the start of digital federalism in Europe. Individual nations could exchange information securely without the need for central oversight.

There are wider international initiatives. The ID 2020 **(3)** project, for instance, aims to use a blockchain-based digital identity to give migrants without documentation a trusted means to prove who they are face-to-face and online.

In Lithuania, an EU funded project (D4FLY) allowed border guards to use blockchain technology to identify individuals and review their paperwork and see where and how often documents had been checked. Elsewhere in the Baltic region, Estonia, which already operates an e-services ecosystem and uses digital identity technology, uses blockchain to exchange migration-related information. Furthermore, Finland has experimented with blockchain for use in pre-paid cards issued to refugees upon arrival to keep track of transactions and allow relevant Finnish agencies to keep across records.

German migration authorities and partners are already using blockchain in day-to-day operations – making this one of the most advanced projects of its kind. Next, essential steps are to develop standards and reference architectures to allow for a variety of blockchain technologies to be used across government services to communicate and exchange data – unlocking new opportunities for collaboration and innovation.

Reference Links:

(1) https://euaa.europa.eu/latest-asylum-trends-asylum#:~:text=Germany%20may%20have%20received%20many,1%20application%20per%204%2C500%20inhabitants

(2) https://www.statista.com/statistics/1107881/asylum-applications-total-germany/

(3) https://www.id2020.org/

Author: *Dinesh Chacko is an independent DevOps Advocate with a knowledge and passion for AI, cloud computing, blockchain technology, and online security. Dinesh has held multiple roles for small and large organizations, including the public sector, oil and gas, banks, telecoms, financial services, EU institutions, and directly for IT solution integrators.*

Creative Practice

Graeme Shaw

Working as a Principal Technical Specialist (Arts) at Brunel University I am surrounded by the latest technology, such as laptops, software, audio interfaces, audio mixing desks etc., alongside analogue equipment such as microphones, theatrical lighting, scenography, speaker systems etc. Therefore, the challenge that I'm faced with as a Technical Specialist in the creative arts is how to marry and utilize all these different components to work together in an artistic environment that demonstrates skillsets to students in such a way as to prepare them for graduate level jobs in-line with our institutional values. This challenge is further compounded by a job role that increasingly leaves little or no time for creative practice.

To answer this challenge, and as part of a theatrical performance that I called Made of Night, I developed a computational system that allowed a performer on stage to manipulate the speed, pitch and volume of sound in real-time. Running parallel to this system are pre-recorded sound samples, drones from Ableton Live software, acoustic capture of live microphones that are placed on the stage to process the sounds generated in the performance area along with a contact microphone hidden in a wooden bowl (choreographic object) as used by the performer that enabled me to process, again, in real-time, the sound of a wooden bowl which, in this, case, was full of marbles (metaphoric planets).

Primarily drawing upon the theatre works of Robert Wilson (American experimental theatre and stage director) and Maro Akaji (Japanese actor, Butoh, and theatre director) and his dance company Dairakudakan, Made of Night sees a protagonist respond to searching questions through a sequence of different technical scenarios (scenes).

Consequently, the dramaturgy of this performance is firmly rooted in cross-culture, East meets West, disciplines.

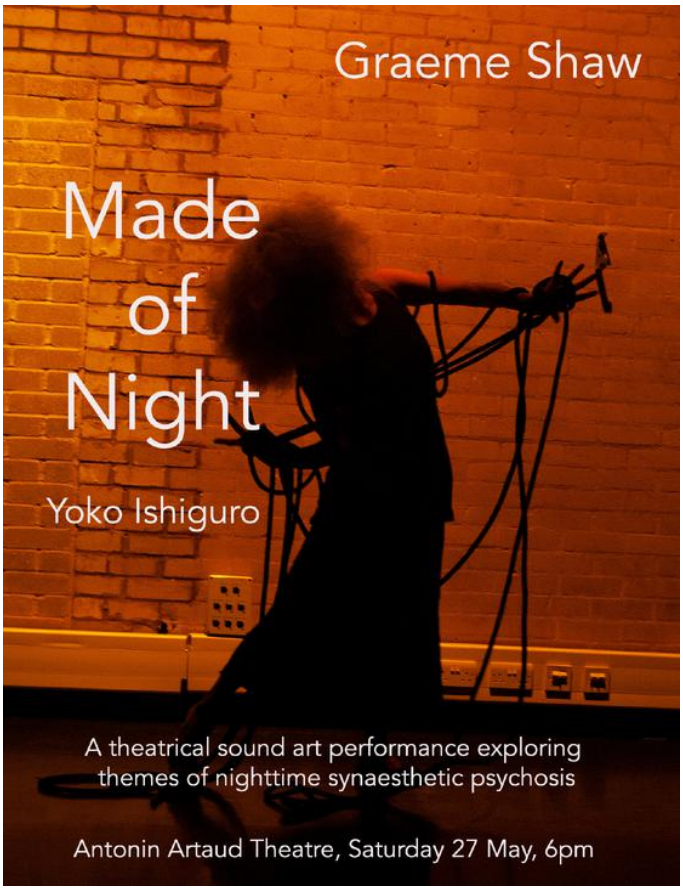


Figure: Digital Poster for Made of Night

In making this work it quickly became apparent of the neurological condition of synaesthesia 'where the stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway'. In this case, the stimulation of physical gesture leads to the involuntary experience of sound.

For the sound world I took inspiration from the early compositional techniques of John Cage and Karlheinz Stockhausen e.g. the use of spoken word, repetition, variable pitch and speed, tape delay, resonators, ring modulators, wave shapers, oscillators and filters etc., all programmed in Max/Msp. Max is the graphical programming interface, while MSP (Max Signal Processing) is a set of tools within Max specifically designed for real-time audio synthesis and processing.

The computational system I developed is based around an overhead camera looking straight down onto the stage at the performer. The data that is generated from the camera's image is received in Isadora software which in turn is then sent to Max/MSP via Open Sound Control (OSC) on the same computer to be processed and output as sound.

Development of this project was a continuous integrated process of daily research, reflection and weekly practical rehearsals (always at weekends) from January 2023 to May 2023. Assisting me with the practical rehearsals was a select team of undergraduate theatre students that took on the roles of technical assistants and stagehands, which empowered them with learning new technical and leadership skills while in the process giving them the first-hand experience of working in a live scenario (as opposed to classroom simulation). Ultimately, I was able to provide the student helpers with glowing references.

Together with the computational system that I created along with the sound design, lighting design, dramaturgy, all layered and combined together to create an immersive sonic environment, I believe that I created a highly original piece of contemporary performance that I'm proud to report received a standing ovation on its opening night.

I'm grateful to the IST for providing a platform here to talk about my creative work and would be delighted to hear from anyone with your own thoughts, comments, practice or projects in creative arts.

Key links:

Video of Performance: Made of Night

Video: The Making of Made of Night (excerpt)

Author:
Graeme Shaw, AFHEA, MIScT
Principal Technical Specialist (Arts)
Brunel University London

The Anthropic Principle and its Relation to Laboratory Science v. 2

Micheal Quigley

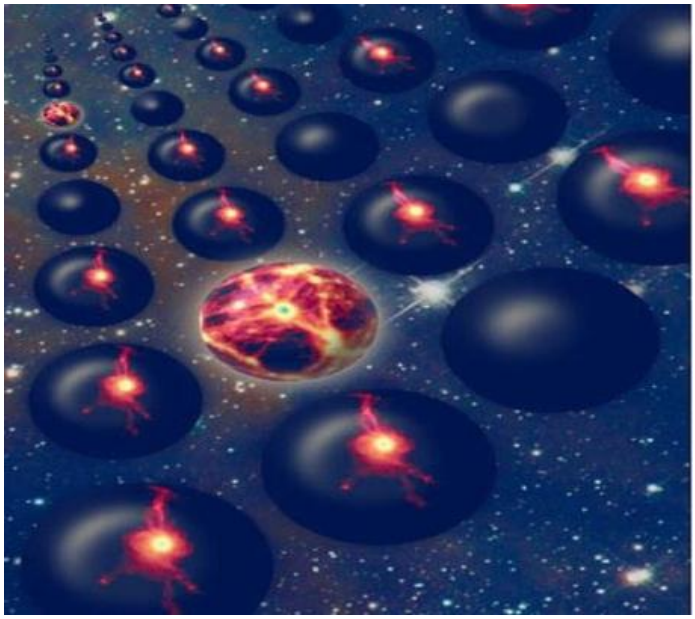


Figure: An illustration of the multiverse – a collection of possibly an infinite number of other universes.

Introduction

The Anthropic Principle is a controversial philosophical concept that is associated with cosmology and our place – as humans – in the universe. If one is prepared to accept the basic tenets behind the Principle, aspects can be seen to extend into laboratory science in general and experimental design and the generation and interpretation of results in particular.

The Principle can trace its printed origins to the early 1900s when it was noted by chemist Lawrence Henderson that the universe must have been fine-tuned to some degree to allow life on Earth to exist as it does. This idea not only supports the concepts expounded by the Anthropic Principle, but also the Gaia Hypothesis (perhaps the subject of a future article). In any case, Henderson's early thoughts were further explored by physicist Robert Dicke in the 1960s and consolidated and named as a principle by another physicist Brandon Carter in the 1970s.

Fine tuning - on which the Weak Anthropic Principle (WAP) is based - suggests that if one or more of the physical constants (for instance the cosmological constant) that define the universe were to be different, then the universe and life as we know it would not exist. In a sense, it's the universe's fine tuning that eventually enabled critically thinking humans to exist and ponder these theories at all. The inference is that some type of selection bias has been involved.

A more deterministic point of view as defined by the Strong Anthropic Principle (SAP) is based on the supposition that the universe and intelligent life as we know are an inevitability.

There are additional variants of the Principle, with some for instance arguing for and against the existence of God. Consider: did God perform the fine tuning? As you might expect, there are many critics of the Principle in any of its forms.

The Laboratory Connection

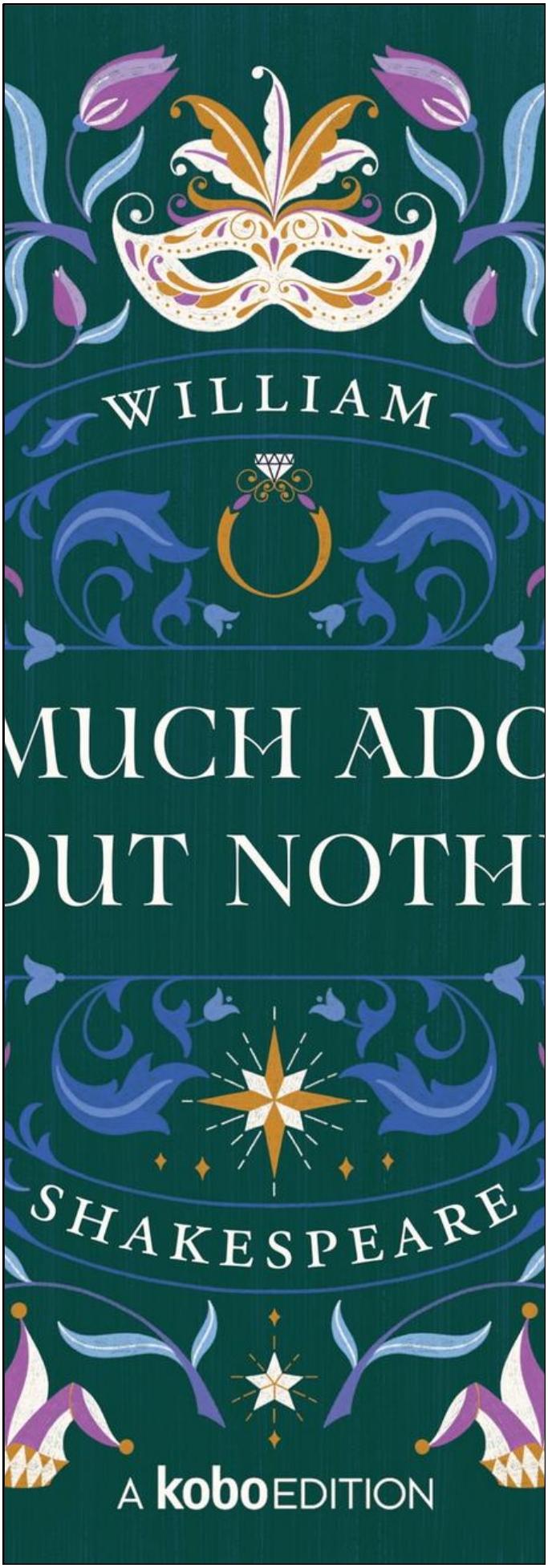
I count myself as an individual with an open mind and I am willing to entertain the Principle in its general sense. As such, it's sobering to think that all the scientific procedures that have ever been performed and that will ever be performed are traceable to theoretical considerations and refinements made possible under either WAP or SAP. As such, contemporary experimental design is based on earlier models and presumptions that eventually came to be accepted. The Anthropic

Principle very much advocates the role of humans in the observation of all aspects of our universe whether it be cosmological or by extrapolation, specifically terrestrial. By its nature, technical work in general with all its sophisticated methods and instrumentation, plays a central role in our understanding of the world we live in. Our worldwide scientific community follows generally accepted premises with widely predictable consequences provided that a procedure is closely followed. Even so, our ability to measure and interpret results can have far-reaching implications given the possibility - and in some cases likelihood - for our own selection bias.

Summary

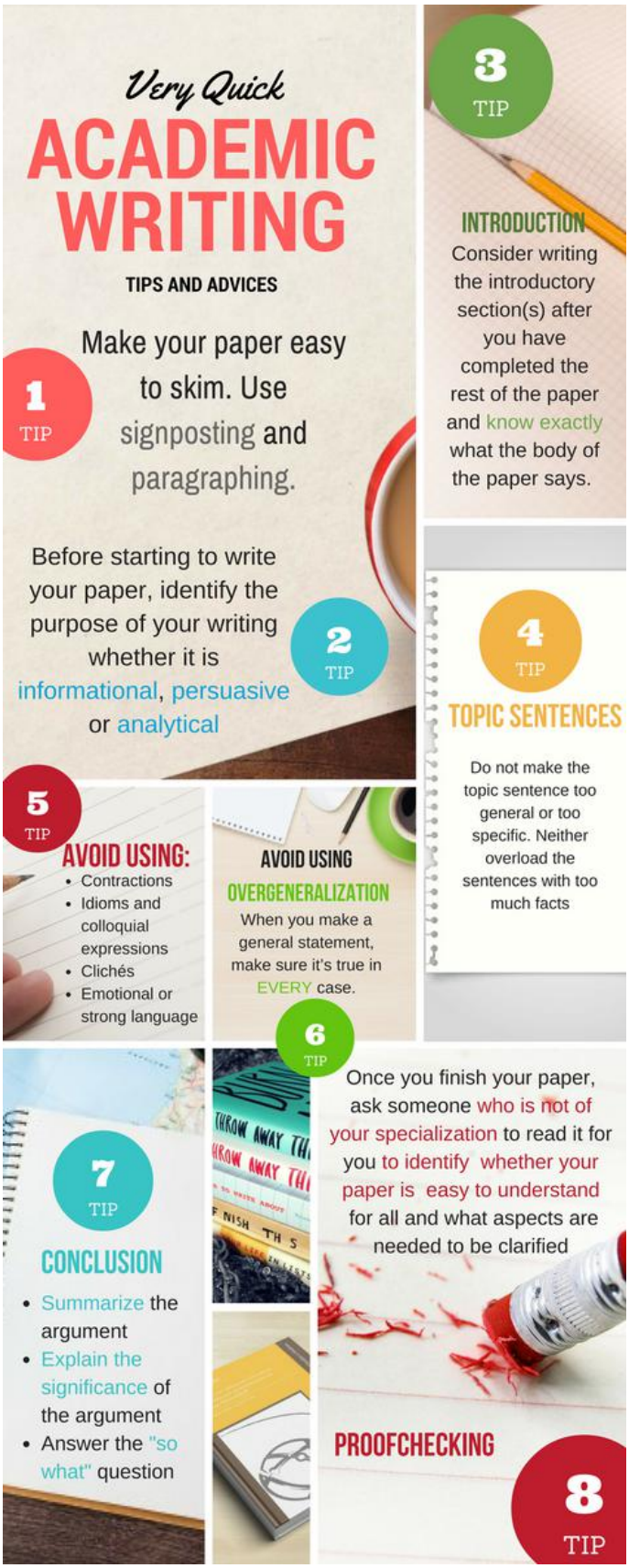
Of course, the universe's supposed fine tuning and the Anthropic Principle that incorporates that theory in a broader sense has received much criticism over the years along with its variants. At its core, most of the criticism promotes an acceptance of the nature of the universe and all its aspects from its start without any thought for a plan or a deterministic route to the future. To Quote Shakespeare, it's all "Much Ado About Nothing". However, for adherents of the Principle, it's interesting to think that we as scientists and technicians, all have an important role in the observation and interpretation of results. Perhaps it's our ability to make and record our observations that provides a hint of something much greater: perhaps it's our destiny.

Author:
Michael N. Quigley, FIScT
Createc Corporation, Ithaca, NY 14850, USA



Tips for approaching academic writing

Dr Tim Sandle



Introduction

If you are a student or an experienced practitioner thinking about contributing an article (such as the IST's The Journal), putting your thoughts together in an academic article are important. Additionally, you might be called upon at work to put together a report – again designing this in an academic style will make your work clearer and it will help it to stand-up to scrutiny.

Academic writing is distinct from personal writing. Firstly, some kind of structure is required, such as a beginning, middle, and end. This simplified structure varies between the 'report' and the 'essay.'

In this article, some tips are presented for approaching both academic reports and essays.

Differences: How reports and essays differ

Essay-type approaches

- An introductory paragraph, which sets out to inform the reader about the nature of the topic, which is discussed and evaluated in the middle of the essay (the body).
- For a thorough introduction, you might want to ask yourself, "Who, What, When, Where, How, and/or Why?"
- It is important that the introduction tells the reader where you will be going, so mention what is going to come up in the essay.
- The introduction may also summarise very succinctly, in a sentence or two, your position on the issue, which is then elaborated on at length in the series of paragraphs that make up the essay's body.

- Each paragraph should develop one idea only – referred to as the controlling idea.
- In the body it can be useful to explore the synthesis of ideas: combining and integrating different concepts, theories, and research under a new focus.
- A discussion section can help to provide an interconnection of the ideas presented. The discussion should be devoted to explaining, interpreting, and where relevant, justifying any findings. This can involve repeating some of the theoretical frameworks or models mentioned in the Introduction, but with a greater focus towards making sense of the outcomes in the current study. Beyond affirming the theory, it is useful to consider any alternative explanations for the findings. These may be drawn from studies that presented inconsistent findings with the theory. Additionally, it may be possible to draw on aspects of the study which may have been left to chance, rather than being experimentally controlled.
- Lastly, the end paragraph constitutes a conclusion in which you may summarise the overall points made.
- The concluding paragraph is also a good point at which to move the essay forward to touch on implications or future advancements surrounding the issues addressed.
- Conclusions round off your essay. They remind the reader of all your main points and explain the significance of your argument.

As well as synthesis, good essays show the application of ideas and concepts. This is the application of in-depth knowledge and understanding of information to the point that the knowledge can then be transported and incorporated into a new context outside of the current contexts in which the information has been presented by other scientists.

Constructing reports

Another type of structure, common in university assignments is that of a report, often organised around the identification of problems or difficulties and corresponding solutions.

A report enables you to:

- Conduct scientific research.
- Formulate a hypothesis(es) about a particular stimulus, event, and/or behaviour.
- Review relevant literature to justify your hypothesis.
- Allow someone to replicate your study by providing precise details.
- Apply statistics to evaluate your hypothesis.
- Explore theoretical explanations.
- Evaluate research objectively and methodically.
- Communicate outcomes concisely and precisely.

A typical report layout is:

- Abstract
- Introduction
- Materials and Method
- Results
- Discussion
- References

The points to note with reports are:

- Unlike most essays, a report is divided according to clearly labelled sections, such as “Introduction,” “Discussion,” “Conclusions,” and “Recommendations.”
- Further, unlike an essay, reports allow for bulleted points with respect to the Conclusions and Recommendations sections.

Good reports will attempt some form of analysis: breaking something down– examining its component parts separately as well as how these parts operate within a whole, and– looking at an issue from a different angle.

Some reports are inductive. An inductive report involves moving from the specific issues, as outlined in the discussion, to the more general, summarised information, as displayed in the conclusions and recommendations. In contrast, other reports are deductive. A deductive report is one where you move from the general then to the specific. Hence, the conclusions and recommendations appear first, followed by the discussion.

Theoretical constructs

Typically, academic writing requires you to clearly describe abstract forms and their component parts, their links to other abstract forms, as well as where they are positioned in relation to a general, overall theoretical system. Even if you are dealing with an oriented topic like the results of an experiment, you will need to relate this back to a theoretical concept: the abstract ideas that underlie the practical nature of the activities concerned.

Hence, academic writing tasks require you to look beneath the surface for underlying principles, theories, and concepts that can offer mainstream as well as alternative explanations for common practices, processes, and procedures.

Critique

Critical thinking is an essential part of academic writing. This involves critiquing theories, arguments, and evidence. When presenting a scientific theory and trying to align this to your thoughts or research, critique should be attempted. In attempting a critique, the following questions might prove useful:

- Does the author provide an inclusive range of options?
- Is the evidence convincing?
- Is the theory logically presented? Does the theory explain all of the outcomes and processes?
- How old is the study/investigation/research? Has any other research disproved or disagreed with the conclusions drawn?
- How many participants were included? Were they students? Did participants come from diverse cultural backgrounds, or did they reflect one cultural group? How old were participants? Were there equal numbers of males and females?
- Could another researcher repeat the methods used and have a reasonable chance of getting the same or comparable results?
- Are limitations of the research or theory acknowledged?
- Are there competing theories which offer better explanations?
- Are there more effective, more scientific, more dependable, more ecologically valid, or more practical methods that the researchers could have used?

Summarising

Expressing the point made by an author is important and summarising the argument is a useful skill, especially for more complex arguments. When summarising the ideas of authors, there are different several techniques. Firstly, you can identify some key words and link these with other words to create a different combination. Secondly, you can be selective about the specific ideas you choose to adopt, while leaving out others. In this way, you are actively summarising the information. Finally, by reordering the ideas in your own framework,

you are also creating a distinction between your version and the author's. All this can be achieved without significantly altering the meaning of the information. Many of these techniques can also be applied to the strategy of paraphrasing authors' ideas. Paraphrasing means to restate information using different words.

In addition to using authors' ideas in your writing by putting their ideas into your own words, via summarising and paraphrasing, you can also embed authors' ideas using quotations.

Avoiding plagiarism

Acknowledging, adequately, the information you use in an essay or report is an important part of all academic work. Failure to acknowledge a source of information (adequately) or using other people's ideas as your own is called plagiarism, and this is regarded a serious form of academic dishonesty.

Good grammar

In academic writing you should aim to follow rules of punctuation and grammar, especially as the end-user or consumer of your writing is likely to be vastly different from you and will not always know to what you are referring. Hence, it is vital that you are clear. Punctuation as well as the conventions of grammar are universally known systems that maintain clarity and avoid ambiguity in expression.

Citations

Across both essays and reports, the use of citations is important. If you make judgements about something in academic writing, there is an expectation that you will need to support your opinion by linking it to what a published author has previously written about the issue. Indeed, citing the work of other authors is

central to academic writing because it shows you have read the literature, understood the ideas, and have integrated these issues and varying perspectives. This will help to give credibility to the point you are seeking to make.

Sources can be grouped into two categories: primary and secondary sources. Primary sources relate to publicly available data, like historical documents (e.g. a transcript of oral history, interview data), raw data from an experiment, or demographic records. Secondary sources draw on these primary sources of data but have been produced for public consumption in the form of a journal article or a chapter in an edited book.

References

Citations need to be compiled as references. Having referred to sources by the author in the body of the academic text, you will also need to provide a detailed list of these sources. This is referred to as a Reference List and is conventionally headed up "References." Sometimes there is a need to include a Bibliography, which is a list of sources you used to develop ideas around the assignment topic, but which you did not actually cite or include in the body of your assignment.

Checking the quality of essays or reports

To check the quality of an essay, the following approach can be useful:

Introduction

- Is my opening broad and interesting?
- Have I followed the funnel shape*?
- Is my aim or statement clear?

The "funnel shape" refers to an organisational structure often used in introductions. It starts broad and gradually narrows down to the specific focus of the paper, much like the shape of a funnel. The idea is to guide the reader from general information or background context toward the specific thesis statement or research question.

Body

- Does each paragraph have a topic sentence?
- Have I kept to one main idea per paragraph?
- Are my ideas fully developed?

Conclusion

- Have I summed up my argument effectively?
- Is there a clear re-statement of my proposition?
- Have I given the essay a sense of completion?

Referencing

- Are quotations introduced smoothly?
- Are quotations accurate?
- Are quotations justified as relevant to the topic?
- Is the formatting correct?

Overall presentation

- Is the essay professionally presented?

Content

- Have I addressed all parts of my aim?
- Is there any information in the wrong section?
- Do the points I am making agree with each other?
- Is there any irrelevant information?
- Can I write anything more clearly?
- Are the main ideas summed up briefly?

Author:
Dr Tim Sandle, Ph.D., CBiol, FIScT is a prominent microbiologist and bio-pharmaceutical expert. His work focuses on microbiology, pharmaceutical science, and healthcare. Dr. Sandle has extensive experience in pharmaceutical microbiology, with a specific focus on contamination control, cleanroom technology, and sterilization processes. He has contributed significantly to the field through research, publications, and participation in regulatory and scientific discussions.Dr. Sandle is also a prolific author and speaker, contributing to journals, books, and conferences, especially in the areas of quality control, regulatory compliance, and biopharmaceutical production.

Applying for Professional Registration: Planning Your Competence Report

1 Think of 5–10 examples of things you have done in your job in the past 3 years

They can be standout, standalone things, or examples of the work you do every day. Try and think of things of which you are especially proud.

Make them varied.

Include times when you have taken a lead on things, when you have been a troubleshooter, when you have used your knowledge to help and support the knowledge of others, when you know your contribution has had a significant outcome, etc.

The majority should be individual examples, rather than times you did something as part of a team.

2 Break your examples down

For each of these instances, think of how you **applied your knowledge** and **personal responsibility**, used your **communication and teamwork skills** and **professional practice**, and **personal and professional development**.

For example, if you were using a machine or a method and it wasn't working correctly, don't just think about what protocol you followed – think about how you knew which protocol would work.

?

Why did you select it, how did your skills dictate your choices, and what was the outcome.

It isn't enough to just describe what happened.

3 Tackle the sections methodically

Use the key words of each section to help you. If a question asks you how you "review" or "select" something, make notes under both these words. Stay away from being too general.

Flesh out your answers using the notes you made above your examples. Take into consideration the categories, for example section D is all about personal responsibility, so talk about this aspect.

Top tips

- Be detailed
- Be clear on your own role, **use "I" not "we"** as far as possible.
- Don't be general –be specific –it's better to write too much than too little.
- Commit to filling in at least 1 section a week until the competence report is complete.

iST Creative UK

If you need more help, get in touch:
registrations@istonline.org.uk

CALL FOR ARTICLES

At the IST, we want to encourage all of our members to submit short articles for our publications; The Tech Magazine or The Journal. Our members would like to see more articles from our Fellows and from our early-career technicians.

If you work at a senior/managerial level, we would encourage you to allow your team members to contribute also, so that they also have the opportunity to publish articles.

These are how the IST will help you:

- **Incentives:** Offer rewards such as recognition in the publications and professional development opportunities for those who contribute. All authors are credited for their article submission. Submitting to the publications can also contribute to your annual CPD review.

- **Contents/Themes:** The wall of contents shows the areas and themes for submissions to provide direction and inspire members to write about relevant topics. We have many areas and themes for members to write about.

- **Ease of Submission:** Simplify the submission process with clear guidelines and an easy-to-use platform. We have simplified the process by giving documents and example articles. We have a template for members to use to submit their article.

- **Spotlight Features:** Highlight articles and authors in publications, websites, or social media to give contributors visibility. Our authors who submit articles will be highlighted across our publications and marketing platforms.

- **Collaborations:** Encourage collaborative articles among members to share different perspectives and reduce the individual writing load. If members are struggling to complete an article, we will assist to help bring the technical workforce together to collaborate.

- **Editorial Support:** Offer editorial assistance to help refine articles and ensure quality content. The Editorial Board will provide constructive feedback to contributors, showing that their work is valued and helping them improve.

- **Regular Reminders:** Send out regular calls for submissions, reminding members of deadlines and the importance of their contributions.

By implementing these strategies, the IST can create a supportive environment that motivates members to share their knowledge and experiences through short articles.

Please send your articles to:

office@istonline.org.uk

The Tech Magazine Vol. 6 No. 1
Release - Mar / April 2025

- Call for articles: Jan/Feb/Mar
- Deadline for submissions: 18th March

The Tech Magazine Vol. 6 No. 2
Release - July / August 2025

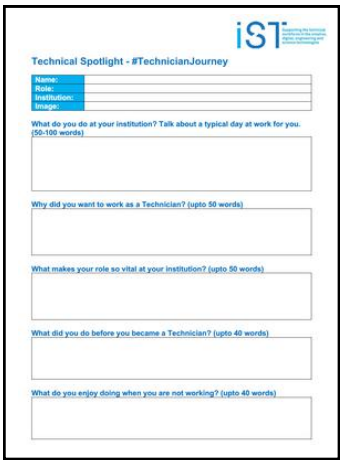
- Call for articles: May/Jun/Jul
- Deadline for submissions: 25th July

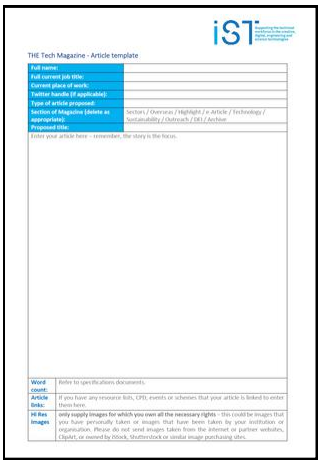
The Journal
Release - November / December 2025

- Call for articles: All Year
- Deadline for submissions: 30th October

You can find the forms below from:

www.istonline.org.uk/resources/the-tech-magazine/





Article Specifications

Sector Specific Articles	Industry, Business & Consultancy | Research Institutes | Higher Education | Schools & Colleges | Overseas	300 – 400 words
Technical Spotlight	*See individual specs for this on page 2*	230 – 270 words
Highlight articles	Special Highlight	300 – 400 words
E-Articles	Articles from all disciplines as Full Papers, Communications, Reviews	1,000 – 2,000 words
Technology Articles	Creative | Digital | Engineering | Science	300 – 500 words
Special Interest Articles	Equality, Diversity & Inclusion | Outreach & Engagement | Sustainability	300 – 500 words

Format and layout of your articles

Keep your writing clear and concise, avoiding repetition or embellishment. All submissions must be in English. You are welcome to use common or standard abbreviations; if your abbreviations are non-standard, please include a definition the first time you use them.

All articles accepted for publication in our magazines and journals are edited and typeset to our house style by professional editors: the manuscript will be formatted for you.

If you would like professional guidance on improving the standard and style of your writing, before submitting your article, we can offer help, support and advice.

Article Types

Articles fall into one of three main categories: Full papers, Communications and Reviews. However, each journal will have further, specific article types, so you should always refer to the publications specific specifications while preparing your manuscript.

Full papers are original, unpublished primary research. Extensions of work that has been published previously in short form such as a Communication are usually acceptable.

Communications must contain original and highly significant work whose high novelty warrants rapid publication.

Reviews may be an authoritative overveiw of a field, a comprehensive literature review, or tutorial-style reference materials. Reviews are usually invited by the editor, but a topic may be proposed by an author via the Editorial Board.

CONGRATULATIONS TO OUR NEW IST FELLOWS
AWARDED AT THE IST TECHNICAL CONFERENCE 2024

James Fox FIScT

The IST is a really important organisation raising the profile and supporting the technical community. I'm proud to be involved with the institute, initially as a member my association has developed as I joined the Tech magazine editorial committee and became an IST PPD assessor and professional registration assessor. The Institute embodies my personal views of inclusivity and supporting life long learning. It's an honour to be made a fellow and I look forward to my continued association with the IST.

Murray Webster FIScT

The work that we do as a part of the Artificial Intelligence Group at the IST is making a tangible difference to both policy and people in the UK and abroad. I am delighted by the results we have achieved and by my part in realising them. The connections we have made in national government and European institutions have allowed me an wonderful degree of personal and professional development, which the IST encourages and facilitates for all its members. I am proud to be a part of such an inclusive, member-oriented, responsible organisation and I look forward to our association in projects to come.

Micromeritics Hosts Technical Conference on Powder and Porous Materials characterisation at UCL East

Dr. Suranjana Bose

On September 3, 2024, Micromeritics hosted a one-day in-person technical conference at University College London (UCL East, Stratford), bringing together experts in the field of material characterisation.

The event featured presentations from Micromeritics senior application scientists Katharina Volz, Steve Coulson and Luca Lucarelli, each offering unique insights into various aspects of powder and porous material characterization. Key topics included Surface Area and Porosity, Chemisorption, Breakthrough Analysis and Flow Reactor Systems. Attendees also participated in a tour of UCL's laboratories, where we observed the Breakthrough Analyser and Flow Reactor in action and had the opportunity to speak with researchers who regularly operate these instruments. The conference also highlighted recent advancements in flow reactor technology and breakthrough analysis. Flow reactors, which enable continuous and scalable chemical reactions, now integrate real-time monitoring for enhanced control and efficiency. These innovations, along with breakthrough analysis in gas adsorption, are paving the way for more efficient catalysts and adsorbents, driving progress in fields such as energy and environmental technology.

A dedicated Q&A session with the senior application scientists focused on troubleshooting common issues in porosimetry analysis and latest updates to the MicroActive software. This session provided valuable insights into maximizing the latest features for more efficient data processing.

Special thanks to IST and TechYork for sponsoring my trip to this conference. It was a fantastic opportunity to refresh my knowledge, learn about cutting-edge technologies, and gain valuable insights into data processing and troubleshooting.

Author:
Dr. Suranjana Bose
BSc MSc PhD MIScT
RSciTech
Green Chemistry
Research Technician
Green Chemistry Centre of Excellence
University of York

HEaTED and IST launch new Artificial Intelligence Courses

Introductory Course and Entry Level Accreditation (RTechAI)

HEaTED have announce their latest collaboration with the Institute of Science and Technology: AI for Technicians Courses. These online courses are open now!

AI For Technicians - An Introduction (10 hours)

This two-day course offers a foundational understanding of AI for technicians, with live sessions and self-paced learning. It covers AI concepts, ethics, and future regulations.

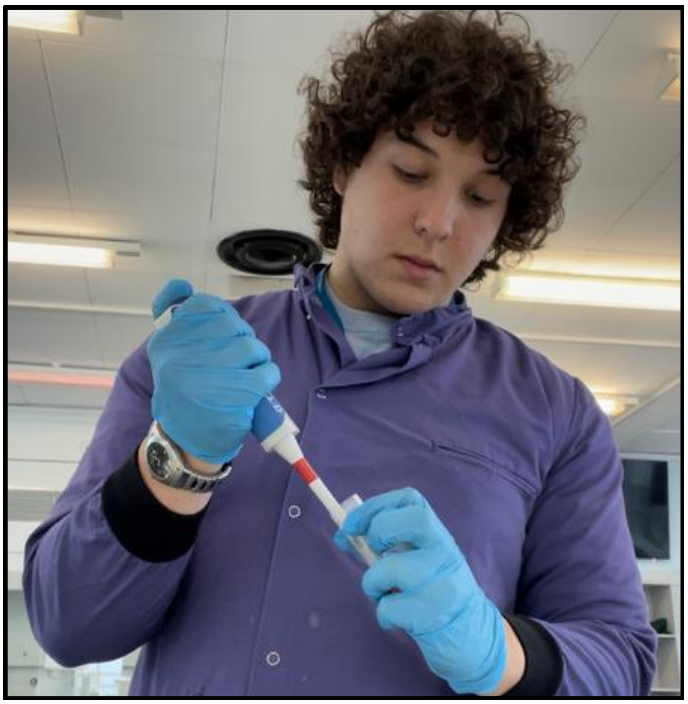
AI For Technicians - Entry Level Accreditation (20 hours)

This four-day course offers live online sessions and self-paced learning, preparing participants for RTechAI registration with the Institute of Science and Technology (IST).

Already a major part of our lives, its influence and impact on society is growing at an even faster pace. As part of the AI Professional Accreditation at the Institute of Science and technology this training provides you with AI skills to the entry level criteria required for the IST. Delegates are then able to use the letters RTechAI after their name.

HEaTED are now taking bookings: https://heated.org.uk.

MORGAN BRETT - Laboratory Technician for Research and Teaching at the University of Liverpool



This article has been taken and adapted slightly from www.technicians.org.uk.

What I Do

I'm a Laboratory Technician at the University of Liverpool in the School of Biosciences. My main job is supporting both research and teaching, but right now, I'm mostly working on the teaching side. I help set up practicals for students in modules like zoology, pharmacology, and general life sciences. The job is super varied—one day I'm prepping chemicals, the next I'm handling live animals like crickets and snails!

How I Became a Technician

I got this job partly thanks to my A-levels in Maths, Chemistry, and Biology. Even though my grades weren't top-notch, it showed that I had a good understanding of the subjects. The university is really good about bringing people in and offering apprenticeships to help them grow. I started off supporting research teams in areas like cancer medicine and pharmacology, which was a smaller setup, and then I moved into my current teaching role. It's been a big learning curve, but I love the hands-on experience I'm getting.

After finishing my A-levels during the COVID period, I didn't really want to go to university. I wanted something practical where I could learn while earning. So I started looking online for jobs and apprenticeships that matched my A-levels. Luckily, I found this technician role at the University of Liverpool that came with an apprenticeship. It was perfect! I had my interview while I was on holiday with friends after our A-levels, and I got the job just before they all headed off to university.

A Typical Day in My Working Life

I work a 9-5 day, and my routine can change a lot. In the morning, I usually start by clearing up from the day before—cleaning equipment, wiping down benches, and putting things away. Then I set up for the day's practicals. We have to be super organised since different labs need to be prepped at specific times.

A lot of my day is spent measuring out materials and chemicals for the students. We also handle specialised things like gas cylinders, which only trained technicians can use. During the practicals, I'm there to help students and lecturers if they need anything. It's cool being that person students feel comfortable asking for help, especially if they're too nervous to ask the lecturer in front of a huge class.

By the end of the day, I help with any urgent clean-ups (like getting rid of bacterial plates), and then I start planning for the next day.

> *Don't stress too much if you're not sure what you want to do yet. Find something you enjoy and find interesting and see where it takes you.*

What I Love Most About My Job

The most rewarding part of my job is the chance to meet and interact with so many interesting people. I used to be a bit shy, but this job has really helped me grow in confidence when it comes to talking to people. I get to chat with students and staff who share my interests, and I'm always learning new things. The variety is amazing too—one day I might be working on cricket behaviour experiments, and the next, I could be mixing up chemical solutions.

It's also satisfying to know I'm helping students learn. When I see them complete a practical I've helped set up, it gives me a real sense of accomplishment. The job also keeps me thinking on my feet. There's a lot of problem-solving involved, like figuring out how to demonstrate a concept or dealing with things that go wrong during a practical. It makes the job exciting and helps me build my own skills alongside the students.

The Best Bits About Working in a Team

Working in a big team of technicians is honestly great. There's always someone around to help if I get stuck or have questions, which is awesome since I'm still new. Everyone's really supportive, and they don't mind if I ask lots of questions. The team is full of experienced people, so I'm constantly learning new things from them. We all have different strengths, which means we can help each other out and support the students better.

Teamwork is also essential when we're setting up practicals for 300 students. You really need a solid team to pull that off smoothly!

IST MEMBER BENEFITS

SPONSORED BY DELL TECHNOLOGIES

EXCLUSIVE DISCOUNTS

Dell UK is proud to partner with the Institute of Science & Technology to provide a range of discounts on selected products.

Benefits for IST members include:

- Up to 20% off Dell Technologies laptops, desktops, and accessories
- Access to additional savings during seasonal Dell promotions
- One-to-one tech advice from Dell advisors

Offer Benefits

7% off all Vostro and Inspiron

14% off all Latitude, Precision, and Optiplex

10% off all XPS, Alienware, Dell Gaming and monitors

20% off all accessories

Email for exclusive offer codes:
office@istonline.org.uk

Use voucher code at the Dell checkout or contact SBAUK@Dell.com for assistance.

DELL Technologies | IST istonline.org.uk

The Heroes Behind the Skies

The Unsung Experts Keeping Airplanes Airborne and Safe

When we think of aviation heroes, pilots often come to mind as the courageous figures who fly us to destinations around the globe and cabin crew as the friendly professionals who ensure our safety and comfort throughout the flight. Yet, beneath the glamour of flying lies a hidden team of equally skilled, dedicated experts: the aircraft technicians and engineers who meticulously ensure that each plane in the sky remains safe, efficient, and reliable. These professionals are the unsung heroes who, behind the scenes, wield their knowledge and expertise to make modern air travel the safest mode of transportation.

Aircraft technicians and engineers are responsible for a vast range of tasks, from routine maintenance checks to complex repairs and system overhauls. Their work covers nearly every aspect of the airplane; from engines and electronics, to hydraulic systems and structural components. Before a plane ever leaves the ground, these professionals perform pre-flight inspections, going through detailed checklists that cover every critical function. Each detail matters, and even the smallest oversight can have significant implications for safety. Technicians routinely inspect landing gear, fuel systems, cabin pressurisation, and even the smallest wiring connections, using state-of-the-art diagnostic tools to detect issues invisible to the naked eye. In commercial aviation, maintenance checks are rigorously scheduled based on an aircraft's flight hours, with major inspections known as "D-checks" that require thousands of hours and often

occur only every few years. Each level of check from A to D, corresponds to the depth, frequency, and complexity of the inspection. The technicians who perform these tasks often work in demanding conditions, navigating narrow spaces and handling complex machinery with precision and care.

Beyond routine inspections, aviation technicians are trained to troubleshoot unexpected issues quickly and efficiently. In a scenario where an aircraft experiences mechanical or technical problems, these experts are always on hand at airports or maintenance facilities, ready to analyse and resolve the issue to minimise delays. This aspect of the job requires not only a solid foundation in engineering principles but also problem-solving abilities under high-stress conditions, as commercial airlines operate under tight schedules that allow little room for error. When issues arise, whether due to weather-induced wear, sudden technical malfunctions, or foreign object damage (such as debris or FOD as its known in aviation, impacting the engines), technicians utilise their skills to devise creative, safe solutions that adhere to strict aviation standards.

The high level of training and certification required for these roles is another testament to their importance. Aircraft technicians undergo rigorous education, often in programmes certified by national aviation bodies like the Civil Aviation Authority (CAA) in the UK or Federal Aviation Administration (FAA) in the US. To maintain their licenses, they must stay updated on advancements in technology and regulations, which change rapidly as aviation technology evolves. With aircraft becoming more complex; such as incorporating cutting-edge materials, advanced sensors and automation, technicians are in a constant state of learning, adapting to new systems that enhance fuel efficiency, reduce noise, and increase overall performance.

The unsung dedication of aircraft technicians extends beyond technical prowess; their commitment to safety requires a strong ethical responsibility to protect every passenger who boards a plane. Each technician and engineer knows that their work is fundamentally about trust; the trust that travelers place in airplanes to carry them safely across the skies. In a world where air travel connects lives and cultures across continents, these skilled individuals are the unseen guardians of that trust. Without their expertise, the aviation industry would be unable to operate with the level of safety and reliability we often take for granted.

While pilots and cabin crew may command the flight, it is the hard work and commitment of aviation technicians and engineers that make each journey possible. They are the silent heroes who make it possible for us to soar through the skies, combining technical excellence with a dedication to safety that deserves as much recognition as those in the flight deck or galleys.

Next time you board a plane to your next destination, consider the team of experts who worked tirelessly to ensure that your journey is as safe and smooth as possible; these heroes behind the skies truly keep the world moving.

Article edited by Dan Ashton-Kinlin, TUI Airways Ltd Cabin Crew.

Can AI take over writing?

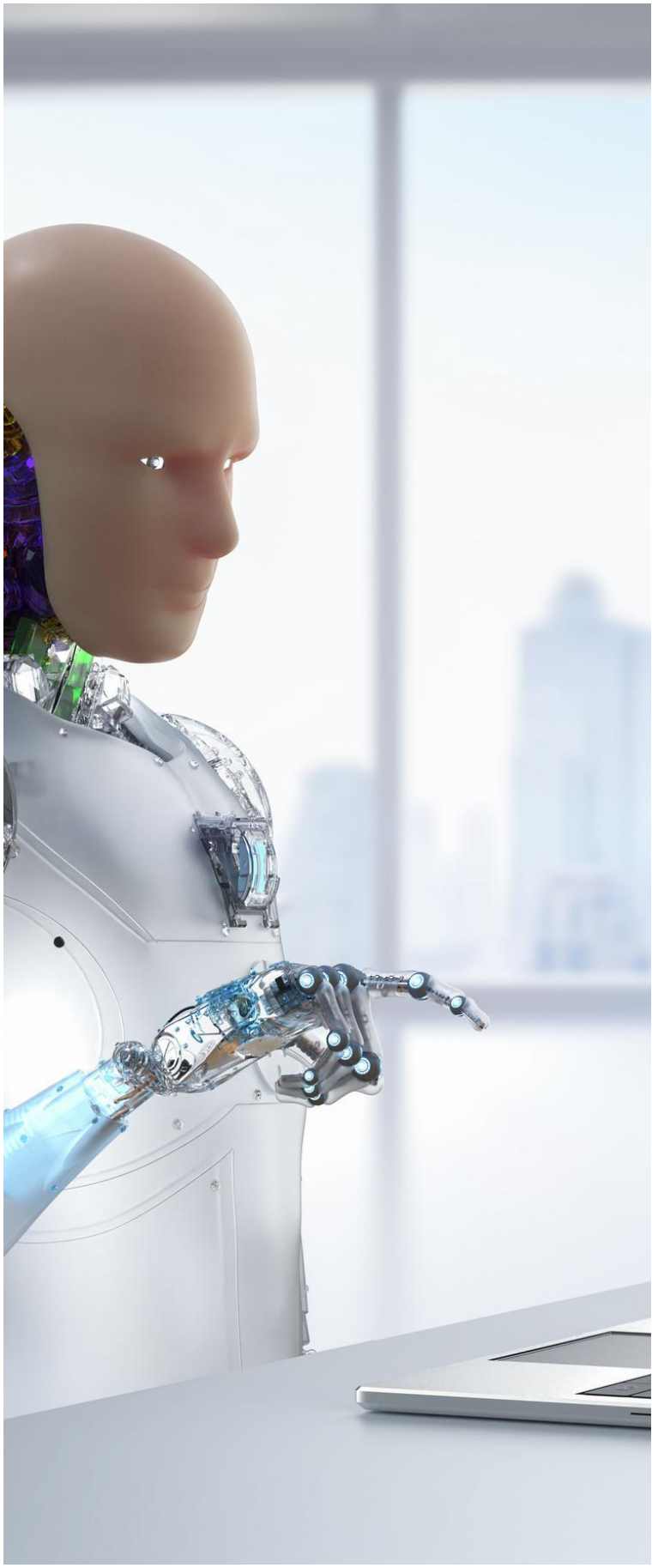
Dr Alicia J. M. Colson

Words carry information in whatever language, but require knowledge of the rules of how to put them together. Given this difficulty any tool which makes it easier to use, words, to construct text, sounds appealing. Whether we write reports, articles, are 'science writers' (sci comm), fire off emails, or construct a cv when looking for a job, then we all assemble words. These tasks involve writing, editing (what you might call 'tweaking') and getting a friend to give it a 'once over' to catch any typos that's “copy-editing”. Now, some may see editing as a “bit of time drain”, even a 'faff' especially as it's clear that ChatGPT and now generative AI can help. If you type the following words in Google “writing culture AI use” you may get the following:

“How is AI used in culture?
Is it ethical to use AI to write?
Is it legal to use AI writing?
Is it ok to use AI to write essays?”

All questions that one might ask oneself. A quick search online reveals that there's a bunch of tools such as Grammarly, and Amazon Web Services. AI can generate 'copy' for you using ChapGPT as it's been programmed (well trained) on pre-existing bodies of content (in other words text written by people). Many of these tools (Sudowrite, Anyword, Writer, Writesonic, Rytr and Jasper) are similar because they use similar LLMs (Large Language Models). They use the same rules in order to provide users with the same answer(s) or 'better' text.

So, should people at work, students, and staff use AI tools to write and “get work done” or write SEO (search engine optimization) copy for a website's blog? It can be argued that using a piece of software “cuts out having to look for



content", it provides a structure for content which you, the writer, can later provide but do these tools really save time? Are they open to abuse? Whose text does the document or email really belong to? Yours or the machines or the programmer who wrote the AI? So, should the text produced by a piece of software be seen as more valuable than the original thoughts of a human being?

Writing, editing and copy-editing is hard work. It's not easy. It's tedious and it feels awful ...and at times you feel as if you're staring at the abyss...of a blank page. Sometimes it feels as if you're pulling your back teeth out just to get some words on the proverbial screen/page...it has a name. It's 'the blank page syndrome' and usually hits as you're trying to formulate the first sentence. Thankfully for this piece I didn't have this problem but it's not been an easy piece to write if I'm blunt. I could have resorted to using AI as it would have been "done quickly". But I've a strong dislike for AI. I'm not keen on the style, and based on what the text that I've read produced by AI it is arguably clunky and formulaic, even dare I say it, vague. It writes sentences such as "x number of people [insert type] think [insert y] about [insert k] with no references. This type of sentence is in my mind, nothing more than a blanket statement which shouldn't be in an essay without detailed references. But it's also the job of an editor to flag up such sentences as a problem to be resolved; i.e. the author needs to insert references to substantiate and support their statement. It's wise for writers to realise and recognise in print, that not everyone in one's professional field shares the same ideas and views. It's inevitable that not everyone agrees with everyone else, so in my view please tell the reader who said what – give us the names!

The next question which arises is do you just "dump", well paste, the data into a piece of software such as ChatGPT or some software tool, or your thoughts as you're determined to save time in the short term? In my view the answer is no. But I must admit I'm not afraid of the blank page...which I do know is tough to face especially as you have to write text in the face of an upcoming deadline. I should be upfront and say that I generally don't suffer from writers' block. But I do know that there's many causes of writer's block and various techniques to deal with it. But writing isn't easy...but then who said that it was? Putting words on the page can be onerous, and even Shakespeare took months to write a play – spending hours using a quill and ink, he didn't even have a typewriter let alone a computer! I've read that some people think that he compiled bits and pieces together – but that's an opinion - a research prospect.

Writing is a skill that we should learn when we're in primary school. Now the question has to be asked: are people using AI for writing? Lack of time? Lack of confidence? Not knowing how to write very well? To be honest, many people I think are very blasé about how easy it is to write something. After all, anyone can string some words together. But writing isn't easy...and I do this in several languages and I know that it's not easy and whoever said that it wasn't, isn't honest with the person asking the question. Writing involves using words which use letters using agreed upon rules of how you use them, called grammar, are a useful means of communicating information.

Many people use AI tools to create templates to help them organise their writing, as some AI tools can provide a structure or structured prompts for writing a piece. Have I tried this? Yes, once. I found it annoying as I've always got a structure outlined when I'm writing something and I know that when I'm writing, sometimes my structure changes. But I figured that if I was writing about AI I had to try this approach so as to see what it was like to experience it.

Now, I did ask myself what if you're using AI to generate a text as you're short of time, so you're using AI to populate an article with facts, figures, and new text. You've not written it yourself. Yes, if you're a researcher you're adding another publication to your list but isn't a publication a means of showing that you, the writer, knows about their subject area? I suspect that AI is being used as a shortcut to getting some of an article written for the REF or what's known as the morass of academic publishing's 'war-zone' of plagiarism, citation indices, the REF, impact factors, Altmetrics, H-indexes, TL:DR aka 'That is, Too Long; Didn't Read' or worse still what often passes as text where an author uses a specific vocabulary only known to the 'select' cognoscenti ('my mates' from my PhD cohort). Plagiarism is a problem **(1)** and AI means that academics can possibly produce (generate) even more publications?

I'm aware that researchers are writing online, social media and from listening to conversations amongst researchers that these AI tools are being used to write academic articles which leads to ethical questions about whether a research article is a fake or not. ...and the likely way to check is to use an algorithm, which is ironic in this era where authors are required by publishers to submit their work to Turnitin **(2)**, a platform is designed to "detect AI-generated content" in order to "uphold the highest standards in education" because plagiarism of academic work is always a worry.

So, how do you spot which research articles are fake? Ahmed Abdeen Hamed, a visiting research fellow at Binghamton University's Thomas J. Watson College of Engineering and Applied Science, created XfakeSci, a machine-learning algorithm which he states detects up to 94% of bogus papers which is twice as successful compared to conventional data mining techniques. This algorithm is only useful for biomedicine articles so it means that the rest of us have to learn how to recognise text generated by AI tools. So, I agree that generative AI poses serious ethical issues for academic resaerchers, writers and students and writers alike, but it is useful for editing manuscripts?

I know that AI is being used by companies to replace copy-editors and editors. I know from having spoken to many copyeditors and editors that many have been let go from their jobs to be replaced by AI algorithms.

This is happening because what they do is considered 'expensive'. At the same time some editors are using AI-assisted tools to increase their speed and efficiency, including those that perform simple copyediting and proofreading tasks, such as identifying and correcting grammar and punctuation mistakes but editors can't be entirely replaced as AI isn't perfect and can only suggest changes. It's not useful for those who want to improve their writing style, or to have a specific voice or know for a specific style of writing.

The US non-profit organisation known as National Novel Writing Month (often called NaNoWriMo) runs an annual competition in November whereby aspiring writers attempt to produce a 50,000-word manuscript. This month they posted a statement that it "does not explicitly support any specific approach to writing, nor does it explicitly condemn any approach, including the use of AI". Not only

does it not object to fiction writers' use of AI, the organisation believes that “the categorical condemnation of Artificial Intelligence has classist and ableist undertones”. The reaction to this decision regarding the use of AI in writing has been mixed and ranges from utter disbelief and causing many authors who had supported it to stop endorsing it.

So, what's the answer? This is a tough question, because using AI comes with moral and ethical challenges. It's not a simple case of just using it. In all honesty, I'm not keen on it but I can understand its advantages but bluntly I dislike the idea of submitting my text, my ideas to a computer to 'harvest' for other people's work.

I'll end this piece with a quote from an article by John Warner on why writing is hard for students, but I'll expand the use of students to include us all,

“I struggle with writing every single day, but it is a struggle I have come to value because of what it requires of me to succeed. This is what I wish for when it comes to students and their writing, to give them a foundation of practice that allows them to engage in productive struggle, the kind of struggle from which we learn. Something like a gazillion words have been spilled on the necessity of integrating generative AI into our classrooms, and I’ve tried my best to see what role this technology has in terms of helping students learn to write, but I honestly have yet to see a use case that effectively increases the productive struggle we should wish for students. The difficulty of writing is the point. If students don’t find the writing hard, something has gone wrong.”

- John Warner 2024

References

(1) https://blogs.lse.ac.uk/impactofsocialsciences/2024/02/08/how-common-is-academic-plagiarism/

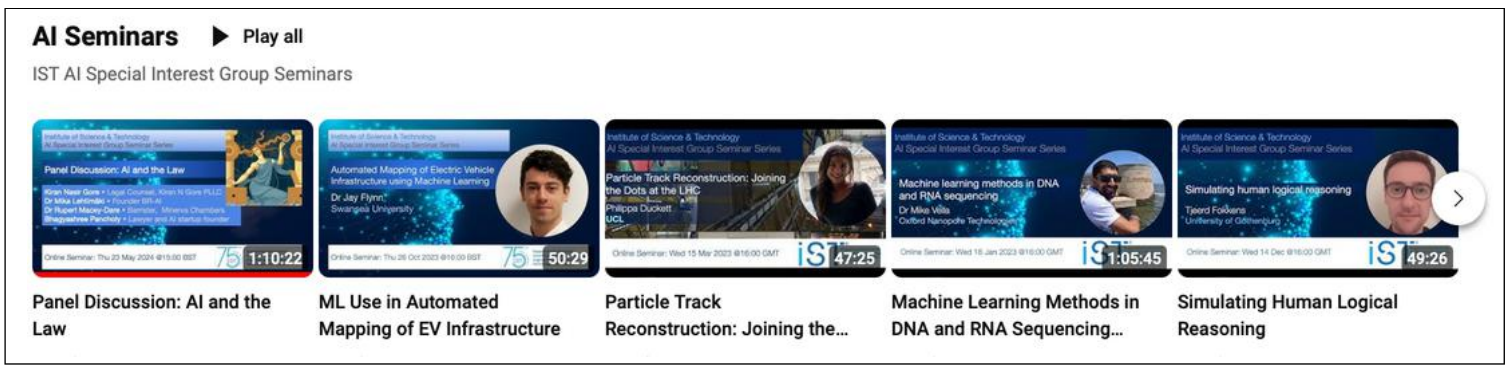
(2) https://www.turnitin.com/

Links and sources of advice for people who write:

1. https://www.insidehighered.com/opinion/blogs/just-visiting/2024/09/20/writing-fun-actually-especially-when-its-hard (Viewed 20/09/2024)
2. https://www.tuc.org.uk/blogs/need-protect-writers-due-growth-artificial-intelligence#
3. https://authorsguild.org/resource/ai-best-practices-for-authors/

Author:
Dr Alicia J. M. Colson, FIScT is a freelance archaeologist and ethnohistorian and a key Management Committee Member in the IST AI Group.

AI Seminar Series - Watch them all on YouTube



40 Years of WISE with HRH The Princess Royal

Women in Tech Group

Image credit: www.wisecampaign.org.uk

Joan Ward and Jan Brett from the IST Women in Tech Group alongisde leading women in STEM and EDI champions, celebrated 40 years of WISE, joined by Her Royal Highness The Princess Royal.

WISE campaigns for gender parity in Science, Technology, Engineering and Maths. 'This remains vital as still only 26% of the current STEM workforce are women' quoted Jan.

As part of the day, the group marked 40 years of progress with an iconic photograph.

ABOUT WISE

In 1984 the Engineering Council collaborated with the Equal Opportunities Commission to launch the Women into Science and Engineering (WISE). Spearheaded by Baroness Beryl Platt, Chair of the Equal Opportunities Commission at the time, the initiative intended to highlight the career opportunities for girls and women in science and engineering professions.

Following on from the Finniston Report on the future of engineering in the UK, the report emphasised the need for a broad talent pool of scientists and engineers.

Since then it has helped a huge number of individuals, organisations and businesses, and contributed to a wide range of campaigns to raise the profile of women and girls in STEM.

Purpose:
Enable and promote the participation, contribution and success of women in the UK STEM workforce.

Vision:
Partner of choice to achieve parity for women in STEM from classroom to boardroom.

Mission:
To support our partners to achieve gender parity and benefit from better productivity, innovation and business performance. These partnerships will strengthen STEM sectors by championing diversity of thought, background and life experience thereby making STEM inclusive to all. Our mission will:

- Inspire every girl to envision a future in STEM
- Empower all women to enter, remain and progress in their STEM careers
- Lead our network of organisations to facilitate collaboration and amplify best practice
- Share insight and knowledge to enable our partners to harness the benefits of diverse talent
- Create a sense of belonging for everyone in STEM

**Credit: www.wisecampaign.org.uk/about-us*

The landscape of Professional Registration and its impact within the wider Technician Commitment

Laurence Dawkins-Hall, CSci CBiol FIScT(reg), FRSB

Preface:

"With 50,000 technicians retiring every year and an estimated need for another 700,000 technicians by 2030, the UK is heading towards an 'existential crisis' in terms of a labour shortfall. The Technician Commitment is designed to redress this short fall and one aspect or Pillar of the Commitment is Professional Registration, which recognises skills practiced in the work place and culminates in post nominals according to seniority, job remit and qualifications.

Professional registration is considered a seminal underpinning of the "Recognition" pillar and the Science Council provides three registers commensurate with experience, responsibilities and qualifications: Namely "Registered Science Technician (RSciTech)" , (1-2 years' experience), "Registered Scientist (RSci)", (2-5 years' experience), and finally "Chartered Scientist (CSci)", (5+ years' experience).

Professional Registration: How and why

My own input into the Technician Commitment, in the last seven years, has been as an Applicant Support Mentor for The Science Council and formerly, as the Assistant Registrar and Professional Registration mentor for the Institute of Science & Technology. In those two roles, I have prepared prospective registrants for the process of applying for Professional Registration and, ad hoc, mentored individuals with regard to specifics of their own, personal applications.

So why apply for Professional Registration?

There are many benefits to applying for Professional Registration but principal amongst them are the following:

1. **Confidence Building:** Obtaining postnominals is like a "shot in the arm" when it comes to a confidence boost and it is not uncommon for organisations to report that successful individuals begin to take on extra responsibility, by virtue of this new found confidence. What is more, I personally know of at least one individual who plucked up the to apply for and achieve promotion in the wake of their CSci post nominals.
2. **Validation of Skills:** Professional registration and specifically completion of the competency form validates a plethora of skills that technicians utilise in the work place (see below)
3. **Networking:** Integral to becoming professionally registered is joining a Licenced body, including the IST. These

are Professional Societies, subsumed by the Science Council, who are licenced to award the particular register (see below) on behalf of the Science Council. Licenced bodies, as established STEM organisations, have their own STEM based events, e.g., Annual conferences, Committees, training courses and Publication forums can facilitate participation and organisation in such events. For my own personification, I have written extensively on how my own registration has benefitted my outside career in Science Communication and STEM e.g.,"Reflections on the last 4 years: From RSci to Papin prize Finalist".

4. **Self-Reflection and CPD:** Compiling a portfolio of evidence as a prelude to Competency form completion is a good opportunity to take stock of progress within your day job, reflecting and recording what you have achieved and what else you might want to achieve. Furthermore, this compilation is not a time limited assignment so registrants are free to muse, reflect, redact and polish their competency draughts, in rough, in their own time.
5. **Outside engagement and external job applications:** In my 5 years of delivering approximately 100-200 workshops to about 3000 delegates, there is one over arching question that recurs over and over again: *"How will Professional Registration benefit me in my current position?"* At this juncture, especially in an HE setting, unfortunately there is no ineluctable path from gaining Professional Registration to becoming promoted. Nevertheless, whilst internal promotions, predicated on possessing or acquiring Professional registration are not sine qua non, interview prospects for external positions are often improved by possession of post nominals. Specifically, Job specs sometimes stipulate "Professional Registration or a willingness to work towards it" as a "desirable characteristic".

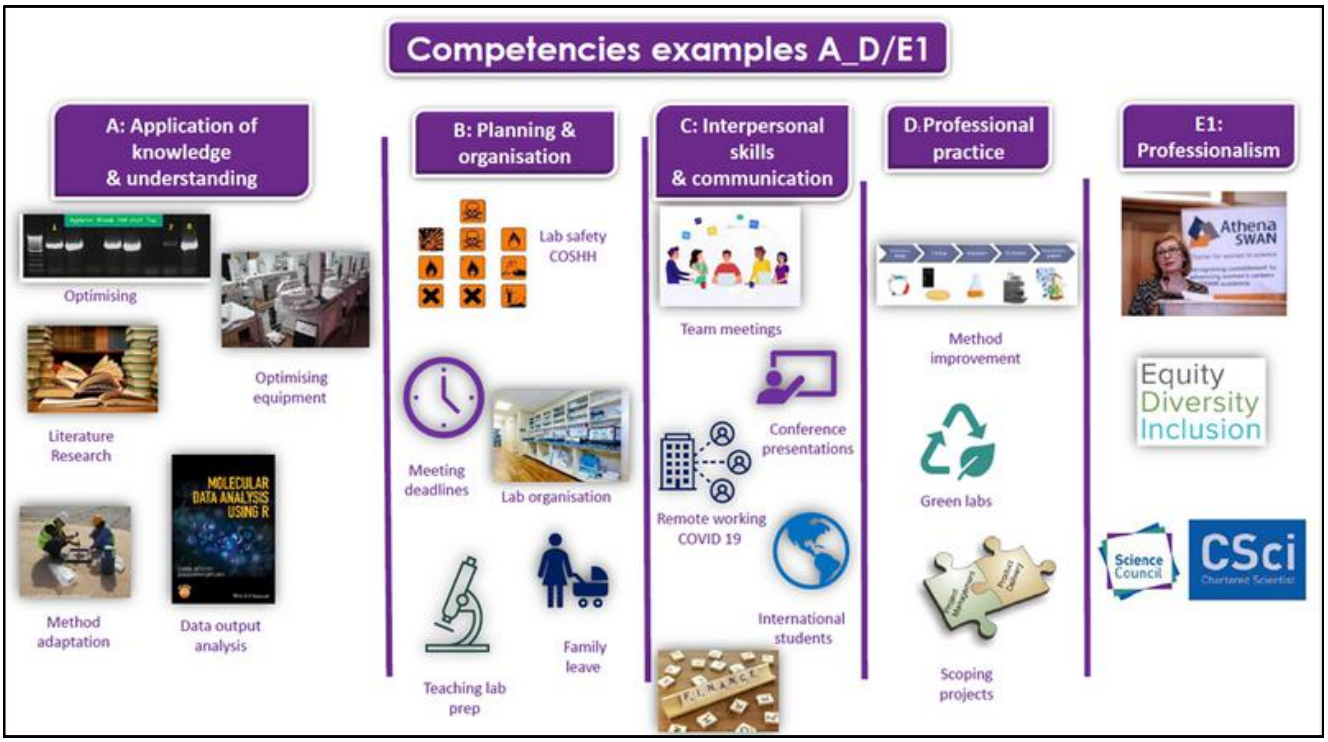
How to apply for Professional Registration

Having put together a portfolio of skills, conducive with competency objectives, (and, in particular, sub competencies thereof), you can then copy and paste that information into relevant fields of the Science Council on line application portal or CAP (Common Application Portal).

Many details within CAP are analogous to a standard job application form, e.g., current position and responsibilities. The CAP specific part of the application is the so-called Competency form, amounting to about 10,000 words, parsed between 5 principal competency categories, which in turn are comprised of 2-4 sub categories (sub competencies, amounting to between 300-1000 words each. This is not a trivial exercise but as already mentioned it can be compiled as a polished draught in your own time.

In addition, the IST has its own independent application process, which can be found on its website. What is nice about the IST specific application process is that it is Register specific and, integral to each Register specific application page, there are is a lot of associated supporting documentation, e.g., RSci, including videos.

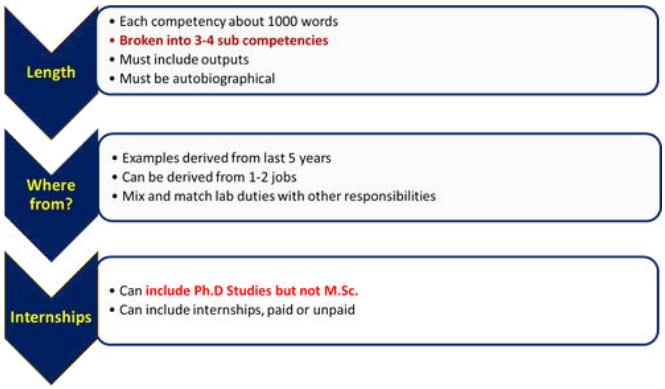
What are the Competency categories and sub competencies thereof?



I have recorded many videos and written vignettes on this subject. Suffice to say therefore that competencies are designed to elucidate technical proficiency and knowledge (A+D); Planning and organisation, including practicing standards (B); Communication, mentoring and supervisory skills (C) and ethical practice with performance improvements (E).Sub competencies subsumed under the main competency headings often provide a narrative thread for a particular working practice. For example, in the case of Competency D (Professional Practice), "Scoping and planning a new project" is considered an exemplar for this competency in the context of CSci: D1 asks you to describe how you plan to instigate the project; D2 then requires you to think about resources and expected time frames; and D3 asks registrants to reflect upon actual as opposed to expected progress, how confounding issues were dealt with and how mission objectives were ultimately met.

Where do I take evidence from in order to compile my working portfolio to complete my competencies?

Competency working practices are generally derived from extant practice associated with the last 3-5 years. However, if a current practice is rooted in antecedents that go back further, it is generally considered acceptable to include that material in your competency prose, providing you can map that practice to current practice. Regarding legitimate environments to derive such practices, unpaid internships as well as salaried positions are considered admissible. Ultimately, it is about demonstrating that you practice in a Professional setting, contributing to independent and original STEM activity.



Another aspect of derivative evidence is that, within specified time frame, information, if necessary, can be taken from two jobs. Specifically, if a prior job is more conducive to, let's say, technical competencies (cf. A and D)

and your present job, other aspects of practice, then is permissible to mix and match competency examples in that way. In general, how you choose to mix and match examples in that time frame and where that information is taken from is at the discretion of the applicant.

What are the categories of Professional Registration commensurate with experience, qualifications and job remit?

There are three principal categories of Professional Registration, designed to accommodate lab Technicians at different stages of their career paths. I have written and recorded on this subject, including, “Which register is right for you?” so I will summarise:

The most junior register is RSciTech: This is not a novice, but rather somebody with 1-2 years’ experience. Consequently, in their competency form, they will be expected to demonstrate safe practice in terms of pertinent operating procedures and associated health and safety, e.g., COSHH and, moreover, be able to explain Scientific theory underpinning that standard practice (Competency A) and updates thereof (Competency D). In addition, because registration is designed to look at working practice holistically and not just technical acumen, they will also need to explain how, for example, they might stock take and order and organise their incipient laboratories for safe and reliable practice (Competency B), how they communicate with like-minded technical colleagues (specialists), but also medical reps and Engineers when dealing with stock problems and equipment problems, respectively (Competency C) and also how they go about improving their own professional practice (CPD), including ethical practice (Competency E), cf. EDI and GDPR regulations.

With 2-5 years’ experience, a typical RSci builds upon the remit of an RSciTech. However, an RSci competency form will be expected to evidence value added practice, such as training STEM personnel in Standard operating procedures (SOPs) and concomitant health and safety (Competency C), improvisation on standard operating procedures to overcome technical problems (Competency A), and independent research to provide better fixes for fraught operating procedures associated with competency A (cf. competency D).

The most experienced level (Register) for Professional registration is a Chartered Scientist), cf CSci.Competency A might (for example) be synonymous with structural innovations to laboratories, Health and safety management and departmental wide innovations. As a person who manages different constituency groups, Competency C, synonymous with specialist and non-specialist mentoring, supervision and communication, could mandate managing health and safety of laboratories and incipient staff, liaising with persons who fail to comply with requisite standards of practice, talking to finance with regard to budgets, talking to estates and services regarding structural renovations, liaising with senior academics and overseeing outreach visits, for example. Competency D might involve scoping and planning for new equipment/operating procedures, with due regard to man power, budgets, health and safety and specialist training; and competency B would require explanation of how this diverse portfolio of responsibility is efficiently planned, implemented and managed.

Credit: The Science Council Registers.

Is Professional Registration Inclusive?

The ethos of Professional Registration is designed to be fully inclusive. What does that mean in practice? Well, for starters, it is not uncommon amongst the aging technical fraternity, who in academia – as opined earlier – are becoming increasingly common, to find individuals who left school with A Levels (Level #3) but moved through the ranks, culminating in an extant position that is Level #7 in terms of remit and thus conducive to the CSci register. In these situations, the lack of a formal Level #7 qualification, e.g., M.Sc. does not preclude applying for CSci. Rather, with submission of an additional Equivalence Report (complementing the standard competency script), application for CSci is permissible. Similarly, analogous reports can be submitted for RSci, in the absence of a Level #5/6 qualification, and RSciTech, in the absence of Level #3/4 qualifications and on the IST web site are part of the cache of support materials linked to each register.

Author:
Laurence Dawkins-Hall BSc CBiol CSci FIScT FRSB is an award winning STEM Educator and Trailblazer: Registration Mentor, NTDC, MI Talent, Lab Innovations & Science Council, RSB CBiol and CSci Assessor/Instructor, Consultant, Marshall Assessor.

Social Media Blogs:

1) "Benefits of Professional registration: A personal perspective" IST Blog 2017
2) "5 Minutes with Laurence Dawkins-Hall" Lab Innovations, 2024
3) "Reflections on the last 4 years: From RSci to Papin prize Finalist" MI 2021
4) "Applicant Support Mentor Short Listed for Papin Prize" Science Council News 2021
5) "Interactive Professional Registration workshops: New year, new format.."
6) "5 Minute interview with Laurence: Technical lanscape" Lab Innovations 2020
7) "Specialist Advisor Spotlight: Laurence Dawkins-Hall" NTDC July 2023
8) "Science Council Profile": Science Council web pages/RSB July 2023
9) "Science Council case study (for CSci)": IST November 2017
10) "For he's a Jolly good fellow" NTDC piece, 2023
11) IST Piece about my Citizens award, University of Leicester, IST Journal 2022

Helping Young People Who Are Struggling With Life

Papyrus: Prevention of Young Suicide

Suicide is the biggest killer of young people in the UK.

Every year we lose around 200 teenagers to suicide.

The national charity PAPYRUS Prevention of Young Suicide believes many of those suicides are preventable.

The charity aims to reduce the number of young people who take their own lives by breaking down the stigma around suicide and equipping people with the skills to recognise and respond to suicidal behaviour.

"Contrary to what people may think, talking openly about suicide doesn't increase the risk by putting the idea into a young person's head. Instead, it gives them a safe space in which to talk openly about how they feel and discuss what help they need," says PAPYRUS' Chief Executive, Ged Flynn.

"Suicide is very complex and rarely the result of single factor, so it is important that a child or a young person who is having thoughts of suicide gets professional help and advice which can help to keep them safe."

PAPYRUS runs a confidential helpline service which provides practical advice and support to young people and anyone who is concerned about a young person who may be having thoughts of suicide.

HOPELINE247 is staffed by trained professionals, offering a telephone, text and email service.

The charity depends on public generosity, donations and fundraising. Every £7 can potentially help to save a young life. Money also helps the charity to provide suicide-prevention projects in local communities across the UK, supports a network of volunteers and helps to deliver training to groups and individuals.

"PAPYRUS was founded in 1997 by a small group of parents who had been bereaved by suicide. Their aim was to prevent other families going through the agony and heartbreak of losing a child to suicide," added Mr Flynn.

"Twenty seven years on and our ethos remains exactly the same. We need to get families to talk openly about suicide, smash the stigma and have conversations which allow a child or a young person to talk about how they feel."

Every year energetic fundraisers walk, run, cycle, climb, swim and even skip to collect money. The brave ones parachute out of aeroplanes and abseil down cliffs and tall buildings.

Three fathers who each lost a daughter to suicide have raised more than a million pounds for PAPYRUS.

Andy Airey, Mike Palmer and Tim Owen, better known as the 3 Dads Walking, attracted national and international publicity by taking part in three marathon walks in 2021, 2022 and again in 2024.

They were walking in memory of their daughters 17-year-old Beth Palmer, 19-year-old Emily Owen and Sophie Airey who was aged 29.

Their mission is to raise money and raise awareness but also to get suicide prevention included in the school curriculum.

Andy Airey said: “The fact that suicide is the biggest killer of young people in the UK is both a tragedy and a national scandal which needs to be addressed.

“Our walks provided a focus for continuing the conversation with governments about embedding suicide prevention in the school curriculum. Young people want to know more about mental wellbeing and where to get help and schools have a vital role to play in saving young lives.“

Mike Palmer added: “The work PAPYRUS does is so vitally important. We all need to talk about suicide. We also need to equip our young people with life-skills which they can carry through the rest of their lives to protect themselves and others.”

Tim Owen said: PAPYRUS works across all four nations and so it made sense for us to walk across Northern Ireland, Scotland, Wales and England where the seats of power can unlock this and potentially save lives.”

Every week the charity receives hundreds of calls, texts and emails. Many of those contacts are from children who have found the strength to get help.

PAPYRUS’ Chief Executive Ged Flynn added:

“It shows such wonderful resilience that children, who have been unable to talk to anyone, are able to reach out and speak to us and share how bewildered and frightened they are.

“It is also wonderful that parents, family members and friends who are concerned about a young person contact us because they want to intervene and seize the opportunity to get them the professional support and advice they need.”

Everything you need to know about PAPYRUS, including valuable resources which can be downloaded, can be found on the charity’s website: www.papyrus-uk.org

For practical, confidential suicide prevention help and advice please contact PAPYRUS HOPELINE247 on 0800 068 4141, text 88247 or email pat@papyrus-uk.org

Image showing PAPYRUS is working in communities across the UK.

PAPYRUS
PREVENTION OF YOUNG SUICIDE

Image shows the three Dads walking.

NTDC Partner Forum 2025 - Technicians: Empowering the Future

The NTDC are holding their annual forum for Partner Affiliates hosted this year by the University of Birmingham.

At their annual conference, they host networking across their wide-reaching community and the event is open to all technical and HR/OD staff in Partner Affiliate organisations.

You can find out if your organisation is a partner affiliate by going to the webpage:

www.ntdc.ac.uk/about-us/partner-affiliates

The organisations in the image on the Right are current on the NTDC website as of 24.10.2024.

Don't see your organisation?

Why not contact the friendly team at the NTDC who can share some information with your managers/senior leaders.

Science Council News

The Science Council recently announced that Professor Catherine Ross CSci CBiol has been elected as its next President, effective immediately.

Catherine has been a member of the Board of Trustees since 2020 and its Vice Chair since June 2021. She has also chaired the Science Council's Policy Advisory Committee (PAC) for the past three years. To take up her new role, Catherine has stepped down from the Board and the PAC. The Science Council will announce a replacement trustee and PAC Chair in the autumn.

The Science Council also shared news that David Wells CSci, Chief Executive of the Institute of Biomedical Science (IBMS), has been appointed as the new Chair of its Board of Trustees. David, who has been a trustee of the Science Council since 2022, will succeed Adam Donnan in September 2024.

David Wells (Chair of the Board of Trustees) and Professor Catherine Ross (Science Council President)

Brunel University London Technical Symposium 2024

On Wednesday 3 July, Brunel hosted its annual Technician Symposium; proudly sponsored by Fisher Scientific and Haier Biomedical.

The full-day event brought together technical staff from across the university, providing a platform for learning, networking and celebrating the vital contributions of technicians.

Vice-Chancellor, Andrew Jones, and Deputy Vice-Chancellor, Jonathan Wastling, set the tone for the day, emphasising the importance of technicians in supporting research, innovation and teaching.

Dr Clare Stevenson, Associate Lead on Technician Commitment, delivered an engaging keynote speech. She highlighted the significance of the Technician Commitment initiative, which aims to address challenges faced by technical staff across institutions and the role played by the UK Institute of Technical Skills & Strategy. Clare's insights resonated with the audience, emphasising the role of technicians in driving excellence within higher education.

Following this the symposium welcomed the return of the exciting "Battle of the Techs." Technicians showcased their skills, creativity and problem-solving abilities in friendly competition. The winning team, Modular Mayhem, impressed everyone with their design of the bridge as well as driving skills earning a total distance of over 700cm.

The outstanding Technician of the Year Award was a celebration for those had made significant contributions throughout the year. Nominations were submitted by peers based on the criteria of Performance Excellence, Leadership and Teamwork, Innovation and Problem Solving, Professional Development and Positive Impact. Congratulations to all 24 technicians who were nominated across the five colleges and departments with the winners being: Philip Nicola (BCAST), Jonathan Holt (IS), Andrew Smith (CEDPS), Roland Lobo (CBASS) and Mat Themis (CHMLS). Each winner received awards designed by Andrew Appel, Design School's work placement student, as well as £100 gift cards.

Throughout the day members had also had a chance to vote for the best submission for the photo competition, with Simin Sakaki securing the top vote. In second and third position respectively were Andrea Rodrigues and Graeme Shaw. The afternoon sessions were dedicated to interactive workshops and panels: Life-long Learning, Sustainability, Mind maps with XMind and Playfulness at work.

The Brunel TechNet Technician Symposium 2024 was a resounding success, reinforcing the sense of community among technicians. This event was organised by technicians, for technicians—a testament to their passion, expertise and commitment. A heartful thank you to all of those involved who contributed their time, energy and resources to making this event a success!

Opportunities for Technicians

The ITSS have opportunities for technical professionals and have been developed for the unique roles that technicians have in the higher education and research sector.

They offer career development programmes, placement opportunities and specialist national networks for technicians working in research or teaching settings, across all disciplines including science, engineering and creative arts.

The Institute's Learning and Development Academy offers:

- Technical development and leadership
- Project Management for Technicians
- Technician Career Development Programme

Credit: https://itss.org.uk/opportunities-for-technicians/

Manchester Met Science Apprentice Conference 2024

The event on 13th September, welcome more than 100 apprentices from across the country and featured a special keynote address by Dr Ella Gilbert, a climate scientist. Our members JP and Arthur were in attendance during the day to speak with delegates and enjoyed meeting 'future potential technical staff'.

The conference included topics on improving scientific communication and building resilience to balance the work-study journey that apprentices face.

"The Science Apprenticeship Conference was an inspiring event run by and for science apprentices. We were honoured to host and sponsor the event, which featured fantastic skills sessions and a range of influential exhibitors for apprentices to connect with. It was a brilliant testament to the power of collaborative learning in shaping the future of science."

PROUD SUPPORTER OF THE
Technician Commitment

iST

Supporting the technical workforce in the creative, digital, engineering and science technologies

Visibility

Recognition

Career Development

Sustainability

SUPPORTING THE TECHNICAL WORKFORCE

We are still accepting expressions of interest to be part of the Editorial Board or to be involved with any of the other IST activities that take place over the year.

Thank You for your contributions

Dinesh Chako, Independent
Graeme Shaw, Brunel University London
Michael Quigley, Createc Corporation (USA)
Tim Sandle, Bio Products Laboratory
James Fox, University of York
Murray Webster, IST AI Group
Suranjana Bose, University of York
Morgan Brett, University of Liverpool
Dan Ashton-Kinlin, TUI Airways Ltd
Alicia Colson, IST AI Group
Laurence Dawkins-Hall, University of Leicester

Many thanks also to:
National Technician Development Centre
HE and Technician Educational Development
Papyrus Charity
Science Council

IST Editorial Board

Wanting to contribute to the magazine?

If you are interested in contributing to The Tech Magazine then please email office@istonline.org.uk.

THE Publications

The Professional Body for the Technical Workforce

Supporting Technical Staff since 1948

www.istonline.org.uk

THE Publications

The Technician Magazine