



IST

Accreditation for AI Practitioners

Guidance and Standards for
AI Practitioner Competence
and Commitment

First Edition
September 2023

Registered Technician

RTechAi

Artificial Intelligence

Registered Practitioner

RPAi

Artificial Intelligence

Advanced Practitioner

APAi

Artificial Intelligence

Robust AI, Safe for Society

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Foreword from the IST Chair

Terry Croft MBE, FIScT CSci

Chair of the Institute of Science and Technology



As with all technological developments, there is the need to develop the technology quickly and bring the benefits to mankind as soon as possible. At the same time, genuine concerns exist about the lack of checks and measures to ensure that the introduction of the new technology doesn't have a negative impact on society. Artificial Intelligence or AI is no exception.

The Institute of Science and Technology, (IST), is a broad church professional body, with members having knowledge and expertise in many disciplines from Science and Technology to Computing and the Creative Arts. We pride ourselves in our ability to adapt to change and develop new areas of support for our members and the wider community as new technologies are introduced into society.

AI falls into this category. Already a major part of our lives, its influence and impact on society is growing at an even faster pace. Therefore, it's reassuring to know that high quality, robust standards, as part of a new AI Professional Register, have been developed by the IST's AI Specialist Group. This impressive piece of work is a significant milestone in the ever-developing world of AI and sets the marker for all AI professionals. It is a landmark development ensuring the highest standards are met by AI Professionals. Registrants will be recognised for their commitment to technical excellence and ethics and will enable better recognition of the value of their roles to the industry, the sector and society. This is a much-needed development and highly recommended to all involved in the fascinating world of AI.

Foreword from the AI Group Chair

Dr Marie Oldfield, CStat, CSci, APAI, FIScT, SFHEA
Chair of the IST AI Group



The Register for AI Practitioners is a historic step in the professionalisation of a discipline and community of practitioners.

AI Practitioners face significant challenges in designing, developing, and deploying robust AI. These challenges are widespread. A plethora of issues seen in the Laidlaw Report (2012), MacPherson Review (2013), and the Lords Select Committee on Science and Technology (2021) have shown consistent problems in ethical modelling.

As regulation and legislation is being developed at pace in order to hold practitioners accountable, the right support, mentorship and training must be a key consideration. The IST, through a group of interdisciplinary experts and the new AI Practitioner Register, is setting the standards for practitioners in AI.

Professionals can now be recognised for their skills and valued for the roles they play in safe and robust AI creation.

This Register works to provide a positive environment for AI Practitioners to flourish, mitigate societal risks from algorithmic harm, and foster an inclusive interdisciplinary practitioner community in AI.

Purpose

This document is the IST's Guidance and Standard for AI Practitioner Competence and Commitment. The primary purpose of this document is to provide guidance and direction for AI practitioners to meet the standards required to become a registered AI practitioner. This document will explain the purpose and benefits of registration, how to achieve registration and give a breakdown of the competency and evidence requirements to meet the AI registration criteria. Professional registration is divided into the following categories:

- Registered AI Technician (RTechAI)
- Registered AI Practitioner (RPAI)
- Advanced AI Practitioner (APAI)

Professional Registration

Professional registration provides evidence that an individual meets the professional standards and commitment required to be part of the ethical and effective development and management of the AI, analytics and modelling of both today and in the future. Registration gives confidence to employers, businesses and organisations of an individual's competency and ethical standards within AI related industries. It provides assurance that the individual has met a standard of knowledge, understanding and professional competence, verifying their suitability to be engaged in AI development and management projects. In order to retain registration the individual must demonstrate continuing Professional and Professional Development (PPD) and adherence to the code and conduct of the IST.

Who is Professional Registration for?

This register is for practitioners who work with AI/Machine Learning/Data Science. You are welcome to apply for registration even if your academic background or core profession is not regarded as technical but you still regularly work with models as a project manager, subject matter expert, or in a similar role. AI-related technologies can be found today across most industries with many different professionals engaged in the development, management and use of advanced modelling and analytics. Every discipline is welcome, from historians to geographers as well as classical scientists. Whilst academic qualification will be considered, professional competence through appropriate working experience is our main consideration. If your AI work is likely to affect society or potentially could do so then you should be aware of your responsibilities both ethically and technically.

Why Register?

- Gain recognition for your achievements.
- Demonstrate your competence and skills.
- Commit to the maintenance of high and exacting standards.
- Substantiate your integrity, ethics and commitment to reducing harm to society.
- Hold yourself accountable to your peers and promote professional standards in your industry.
- Demonstrate a commitment to continuing professional development.

What's in it for me?

- Feel more confident in your role and professional competence.
- Demonstrate to businesses, employers, peers and organisations your professional competence.
- Fulfil your employer and industry requirements through demonstration of professional development.
- Identify areas for improvement and increase your skills. Demonstrate progression by advancement through levels of registration.
- Increase your earning potential and opportunity for employment.
- Gain a sense of achievement and professional satisfaction.

What Registrants Say

“Being a registered practitioner recognises my professional practice with the emphasis being on ‘professional’. We have struggled for decades to be recognised for the important role we provide”

“Professional registration demonstrates to employers that I have an ongoing commitment to my personal development and professionalism, and that my competence has been assessed independently by my peers. It has really helped me during interviews as I can readily identify examples of my experiential knowledge and behaviour competencies.”

“Having this award has enabled me to showcase the diversity of my skills and has also helped me see how much I have achieved and where I want to progress and develop further in my career.”

Overview of Professional Registration Titles

	Registered AI Technician (RTechAI)	Registered AI Practitioner (RPAI)	Advanced AI Practitioner (APAI)
Description	An early career professional that is able to apply proven techniques and demonstrates good analytical skills within their area of expertise. They are able to apply safe and ethical practices.	Has verifiable experience in their field and holds managerial, technical or social responsibility in the conduct of their work. They promote safe and ethical work within their field.	A leader in their field. Manages and develops models and/or policy and guides others to success. They demonstrate accountability and upholds standards in their work.
Key Attributes & Academic Qualifications	<p>OFQUAL Level 3 or equivalent</p> <ol style="list-style-type: none"> 1. Contributes to design, management processes and/or administration of analytical models or advanced analytics. 2. Has technical or supervisory responsibility for models. 3. Is able to effectively communicate and explain the technical aspects of their work. 4. Committed to their professional values and progression. 	<p>OFQUAL level 5 or equivalent</p> <ol style="list-style-type: none"> 1. Has strong understanding of theoretical knowledge and analytical techniques in their field. 2. Has responsibility for the design, management or implementation of models and projects. 3. Is able to effectively communicate and interpret complex problems. 4. Exercises professional integrity and reasonable challenge. 	<p>OFQUAL Level 7 or equivalent</p> <ol style="list-style-type: none"> 1. Applies a broad level of skills and knowledge to tackle complex problems. 2. Is likely to manage a programme of work and has responsibility for the development of early career professionals. 3. Has leadership experience and owns risk within their organisation. 4. Is able to influence and promote ethical and professional standards within their organisation and field.
	<p>Registered Technician</p> <p>RTechAI</p> <p>Artificial Intelligence</p>	<p>Registered Practitioner</p> <p>RPAI</p> <p>Artificial Intelligence</p>	<p>Advanced Practitioner</p> <p>APAI</p> <p>Artificial Intelligence</p>

Benefits for Employers

Registration is designed to verify the competence and commitment to professional standards. Employment and work with individuals with professional registration will help employers:

- Reduce risk and liabilities.
- Professional competence substantiated by peers and accountability to a professional code of conduct.
- Gain assurance of robustly designed AI, reducing ethical and legal liabilities.
- Understand the level and professional skills of those you are employing.
- Employ those with robust knowledge of ethical modelling.
- Provide credibility in the quality and ethical standard of your products.
- Demonstrate ethical and professional responsibility in the workplace.
- Ensure accountability to accreditation standards and the professional body.
- Promote continuous professional development activities and encourage individuals to progress within their profession.
- Encourage mentoring and training between early career and senior professionals.

How do we measure competence?

Competence can be defined as an individual's ability to conduct professional activities successfully and safely within their field. It is an appraisal of their professional effectiveness, robustness of their work, interpersonal skills, analytical qualities and professionalism. This includes the individual's professional judgement, awareness of limitations and ability to consult and seek assistance appropriately.

The competency and commitment of an applicant are assessed on five key criteria:

- Knowledge, understanding and application.
- Ethical responsibility.
- Interpersonal skills and communication.
- Critical evaluation.
- Professionalism and standards.

The criteria and competencies within this register have been approved by a steering board of experts and specialists from partner organisations in UK Government, academia, and industry. The AI Group of the IST has ensured that they are fit for purpose, relevant, and robust. The register is aligned to similar registers in different disciplines so that practitioners are well qualified, with many transferrable and comparable competencies.

What is Professional Commitment?

Being a registered AI professional requires an individual to have professional and personal commitment to their profession and society to ensure safe progression, ethical implementation, and adherence to standards in their work. Practitioners are required to demonstrate competence in their knowledge and values in providing meaningful contribution to their industry.

Some of the key components of this are:

- Minimising harm to society.
- Complying with codes of conduct, codes of practice, and legal and regulatory frameworks.
- Ensuring that the models they work with or develop are well understood and applied in the correct manner.
- Committing to their own Personal and Professional Development (PPD) and assist others where they can.
- Exercising their responsibilities in an ethical manner.
- Recognising inclusivity and diversity.
- Providing reasonable and proportional challenges where issues are identified.
- Actively participating within their profession and industry.

Registered AI professionals are required to submit annual PPD reports to evidence their continuing commitment to their professional progression. Guidance on how to submit annual and initial PPD reports can be found on <https://istonline.org.uk>.

Ethical Standards

Applicants for professional registration will be required to demonstrate their contribution to maintaining ethical standards appropriate to their level and to describe what it means to them. Ethical standards are not about thinking the same way; it is about intent and ensuring the consequences of our actions do not harm or disadvantage others. As a Registered AI Professional you will be expected to evaluate your work and that of others such that within your control you adopt processes and approaches that aim to minimise any negative impact on society.

All AI registered professionals will be expected to adhere to the IST's Code of Practice, a copy of which can be found on <https://istonline.org.uk>.

How to Become Registered

To become registered you will need to submit the following:

- Become an IST member. Details can be found at <https://istonline.org.uk/membership/>.
- Identify your desired level of registration for AI Professional Accreditation, then submit the application form found on the registration page.
- Submit a PPD report detailing your activities undertaken over the last 12 months and your proposed PPD activities over the next year.
- Attach copies of your relevant academic and professional certificates and CV with your registration application.
- As part of your application you will be required to supply details of two referees. The referees must have been associated with you in a professional and/or academic capacity and have good awareness of your work. They should be appropriately qualified to provide an appraisal on your professional and/or academic conduct. At least one referee must have had contact with you in a professional capacity (i.e. both references should not be academic).
- Additional information may be sought if the original documentation is not deemed sufficient for an award and mentoring can be provided for those needing more support.

Contact: registrations@istonline.org.uk

Complete IST and AI Registration Forms

Enclose your current Curriculum Vitae (CV)

Enclose your academic & professional certificates

Complete a PPD record

Use this handbook for guidance and direction

Mentoring & feedback will be available

Competency Categories

SECTION I Knowledge, Understanding and Application

Apply knowledge and expertise appropriately and effectively to practical and real problems. Demonstrate good understanding of the relevant field, industry and its interactions.

SECTION II Ethical Responsibility

Demonstrate accountability for work and understand the impacts and risks to society and the user. Use robust processes and have good awareness of relevant policies and regulation.

SECTION III Interpersonal Skills & Communication

Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.

SECTION IV Critical Evaluation

Apply knowledge appropriately, competently and be self-critical in terms of all aspects of data handling; and the testing and validation of data-based models.

SECTION V Professionalism & Standards

Demonstrate professional conduct, exercise integrity and adhere to relevant code of conduct. Show continuing professional development and progression.

Registered AI Technician

Competency	Evidence
<p>I. Knowledge, Understanding and Application</p> <p>Has relevant knowledge and understanding of their field and applies their expertise in an appropriate manner.</p>	<p>A. Has the requisite knowledge/training to engage in the project/study.</p> <ul style="list-style-type: none"> • Able to evaluate methods for studies. • Selects appropriate solutions. • Understands project requirements and can produce reasonable hypotheses and conclusions • Can identify specialist requirements <p>B. Applies appropriate current methodology.</p> <ul style="list-style-type: none"> • Has up to date knowledge in their specialist area and is able to draw upon their knowledge to select methodology. • Is able to use a range of methodologies and able to apply new methodology. <p>C. Interprets and evaluates models, data and output appropriately.</p> <ul style="list-style-type: none"> • Can understand data flow in models. • Has an understanding of what results should be seen in the output. • Can evaluate models for relevancy. • Understands that the output can be misleading and has holistic awareness of model processes to understand the output. • Can interpret and translate output.
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>A. Able to research and apply ethical modelling principles.</p> <ul style="list-style-type: none"> • Is aware of current developments in their area. • Understands how modelling is affected by ethics reviews. • Has demonstrated applied research. <p>B. Knows how and when to seek guidance from others and escalate issues.</p> <ul style="list-style-type: none"> • Can communicate effectively with those in different roles. • Is able to identify and escalate shortfalls and failings at the appropriate level. • Recognises limitations in their knowledge and seeks guidance when required. <p>C. Maintains quality and applies ethical working practices</p> <ul style="list-style-type: none"> • Maintains quality within the models they work on. • Is a role model for quality. • Applies ethical working practises and requests the right specialists where necessary.

Registered AI Technician

Competency	Evidence
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>D. Raises awareness and may suggest remediation of potential ethical issues arising within models.</p> <ul style="list-style-type: none"> • Raises awareness within the team of ethical issues inherent in modelling. • Can suggest potential mitigations or remedies for ethical issues. • Identifies misleading output, lack of understanding of the model or communication issues. <p>E. Undertakes due diligence, usually with others, in accordance with their institution's ethical code of conduct/policies and relevant national and/or industry legislation, guidelines and/or agreed principles.</p> <ul style="list-style-type: none"> • Works within the relevant policies, regulations and guidance pertaining to their activities and role. • Understands where to find the relevant policies, guidance, regulation and legislation. • Seeks guidance to understand or find the relevant policies, guidance, regulation and legislation. • Can apply relevant policies, guidance, regulation and legislation.
<p>III. Interpersonal Skills and Communication</p> <p>Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.</p>	<p>A. Demonstrates effective communication, interpersonal and behavioural skills.</p> <ul style="list-style-type: none"> • Demonstrates effective communication and can provide example of this in discussions, presentations, reports, training, etc. • Can interact with colleagues in a constructive way. • Can provide challenge in a constructive way. <p>B. Works effectively with others.</p> <ul style="list-style-type: none"> • Builds positive working relationships. • Works constructively within a team. • Is a proactive, productive and committed team member. • Can liaise with other groups and professionals effectively. <p>C. Able to explain complex ideas within their specialist field to non-specialists effectively.</p> <ul style="list-style-type: none"> • Demonstrates effective communication with those outside of their specialist area. • May undertake activities outside of their core profession or technical area. • Can explain technical work and demonstrate this in formal written work.

Registered AI Technician

Competency	Evidence
<p>IV. Critical Evaluation</p> <p>Applies knowledge appropriately, competently and is self-critical in terms of all aspects of data handling; and the testing and validation of data-based models.</p>	<ul style="list-style-type: none"> • Understands the statistical basis and theory for robust data collection. • Ensures model data is valid, ensuring that the data plans are robust throughout and mitigates the need for re-work. <ul style="list-style-type: none"> • Understands the role and necessity of assumptions and caveats. Can discuss the difference between the two. • Is able to identify and document significant assumptions and caveats and understands key differences between model and reality. <ul style="list-style-type: none"> • Understands the data, model flow and output to the extent that issues can be raised when spotted. Actively searches for any deviations from the expected output and operation. • Monitors code and model performance. • Ensures issues are raised in a timely manner and corrections are suggested. • Contributes to the analysis of their own and possibly other's work. <ul style="list-style-type: none"> • Is able to test and validate models in multiple ways. • Understands user testing and its role in model development. • Understands unit testing and software testing. • Understands technical model testing. • Can use verification and validation methodology and paperwork or similar (see AQUA Book).
<p>V. Professionalism and Standards</p> <p>Demonstrates professional conduct; continuing professional development, learning and training.</p>	<ul style="list-style-type: none"> • Maintains all required professional standards required by their workplace. • Adheres to all relevant guidance, policies, regulation, legislation. • May help produce new standards. <ul style="list-style-type: none"> • Complies with the IST code of conduct at all times. Understands and adheres to required professional standards.

Registered AI Technician

Competency	Evidence	
<p>V. Professionalism and Standards</p> <p>Demonstrates professional conduct; continuing professional development, learning and training.</p>	<p>C. Exercises professional integrity and provides reasonable and proportionate challenge where necessary.</p>	<ul style="list-style-type: none">• Can explain good and bad outcomes and recognises when either work needs to be repeated or a recommendation to stop and review if required.• Can communicate the reasons for any pause or stop recommendation in terms of ethics, modelling methodology or quality-related standards.
	<p>D. Engages in regular new learning and development.</p>	<ul style="list-style-type: none">• Undertakes activities to enhance competence in their area i.e Continuous Professional Development (PPD)• Engages in regular learning and development whether inside or outside the workplace.• Identifies weaknesses and shortfalls in their own knowledge and takes steps to rectify these deficiencies.
	<p>E. Maintains up-to-date and appropriate PPD/PPD records.</p>	<ul style="list-style-type: none">• PPD may include work based learning, professional activity, formal/educational/self directed learning.• Records their activities, progression and details the benefits to themselves and others.• Adheres to the IST PPD Guidelines.

Registered AI Practitioner

Competency	Evidence
<p>I. Knowledge, Understanding and Application</p> <p>Has relevant knowledge and understanding of their field and applies their expertise in an appropriate manner.</p>	<p>Has managed a complete study or project either making the decision on or interfacing and working closely with the relevant people for:</p> <ul style="list-style-type: none"> • Resource Management • Budget Control • Project Management • Risk Management • Ethical design • Data collection • Model development • Model Testing • Model Implementation • Validation and Verification
<p>A. Has managed a project/study.</p>	<p>B. Analyses, interprets and evaluates new information, ideas/concepts, models and methodologies.</p> <ul style="list-style-type: none"> • Reviews literature regularly to keep up to date with developments in their discipline. • Is able to critically evaluate new ideas/concepts/models and methods. • Enables others to interpret their work and is able to seek guidance where necessary. • Able to explain concepts in a new subject or discipline. • May have been involved in developing new models or experimental proof of concept, can fully explain the model, how it works and what the output means.
<p>C. Identifies, reviews and selects appropriate techniques, procedures, methods.</p>	<ul style="list-style-type: none"> • Can choose and implement new ideas concepts models and methods appropriately. • Has developed new methods or adapted existing methods.
<p>D. May supervise other team members and review their work.</p>	<ul style="list-style-type: none"> • Is able to use their knowledge to guide or supervise others in the conduct of their work. • Is able to communicate their specialist knowledge to professionals in their own discipline as well as outside their discipline. • Reviews work and suggests any improvements or changes. • Is able to impart their knowledge for the advantage of others.

Registered AI Practitioner

Competency	Evidence	
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>A. Aware of a variety of ethical frameworks.</p>	<ul style="list-style-type: none"> • Aware of a variety of applicable ethical frameworks, guidance, policies, regulations and legislation. • Can appropriately apply ethical frameworks to their work. • Can intelligently interpret guidance and policy and understand the implications that may exist.
	<p>B. Identifies, reviews and selects appropriate ethical principles.</p>	<ul style="list-style-type: none"> • Is able to identify potential ethical flaws within their work and identify solutions or mitigating actions. • Actively applies processes or approaches to their work to avoid discriminating or harmful consequences.
	<p>C. Knows how and when to seek guidance from others and escalate issues.</p>	<ul style="list-style-type: none"> • Seeks guidance from relevant specialists or peers when required. • Recognises their own limitations. • Understands when and where to seek guidance. • Use the correct channels for escalation where problems and challenges arise.
	<p>D. Works autonomously with regard to ethical use of new methods and knows when to seek guidance from others.</p>	<ul style="list-style-type: none"> • Works with no supervision for key tasks central to their own role but is also able to demonstrate when specialist or senior input is required and can seek this accordingly. • Is able to apply their own judgement and own decisions confidently at an appropriate level.
	<p>E. Takes responsibility for working practices with regard to existing ethical frameworks and guidance.</p>	<ul style="list-style-type: none"> • Can train team members on working practices with regard to existing ethical frameworks or regulation. • Knows where to find, how to apply and can critically evaluate these frameworks. • Can communicate why the frameworks have been chosen and how they should be used.
	<p>F. Contributes to the development and evaluation of existing ethical guidance.</p>	<ul style="list-style-type: none"> • Contributes towards internal guidance on ethical practices and development of models. • May contribute to external guidance or working groups.

Registered AI Practitioner

Competency	Evidence
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>G. Raises awareness of potential ethical issues arising within models and often undertakes remediation if such issues are found to be present.</p> <ul style="list-style-type: none"> • Understands the plethora of ethical issues that may affect a given model, for example, inappropriate data leading to bias or skewed data sets, lack of consideration of end user, interpersonal issues within a team preventing challenge, lack of interdisciplinary engagement, lack of relevant specialist engagement and group think. • Can undertake positive and constructive challenge, make and implement recommendations. <p>H. Undertakes due diligence either personally or collaboratively in accordance with their institution's ethical code of conduct/policies and relevant national and/or industry legislation, guidelines and/or agreed principles.</p> <ul style="list-style-type: none"> • Examines the relevant policies, guidance, regulation and legislation and undertakes due diligence before starting a project. • Understands that the concept phase of model development is key and that adequate consideration must be given to, for example, potential risks, robustness and justification of a solution and potential impact on society and users. • Mitigates risks as far as possible before modelling begins.
<p>III. Interpersonal Skills and Communication</p> <p>Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.</p>	<p>A. Creates and maintains productive working relationships with others and resolves conflicts.</p> <ul style="list-style-type: none"> • Demonstrates good working relationships and the ability to solve problems. • Liaises with other relevant groups within and outside their organisation. • Can resolve conflict between team members or between themselves and others. • Recognises the nature of conflicts and can empathise and understand differences of perspective. <p>B. Works as an effective member of an interdisciplinary team.</p> <ul style="list-style-type: none"> • Is able to work with others within the same discipline but is equally comfortable working with different professions and backgrounds. • Can explain their work in simple, understandable terms (may be in papers, presentations, workshops or conferences etc). • Can establish good working relationships with interdisciplinary team members. • Invites diversity of thought.

Registered AI Practitioner

Competency	Evidence
<p>III. Interpersonal Skills and Communication</p>	<p>C. Contributes to complex problems and provides constructive challenge to achieve collective goals.</p> <ul style="list-style-type: none"> • Is able to apply their viewpoints to complex problems constructively. • Can provide constructive and evidenced challenge within the team and with senior staff. • Can confidently raise issues at the appropriate level when identifying potential or existing problems. <p>D. Demonstrates self-awareness and recognition of diversity and inclusion issues.</p> <ul style="list-style-type: none"> • Is aware of diversity and inclusion issues that may exist within their industry, organisation or in its interface with society. • Promotes equality, diversity and inclusion within their teams. • Is self-reflective in their actions and is proactive in reducing the impacts of their own biases.
<p>IV. Critical Evaluation</p> <p>Applies knowledge appropriately, competently and self-critical in terms of all aspects of data handling; and the testing and validation data-based models.</p>	<p>A. Determine appropriate data for the project/study.</p> <ul style="list-style-type: none"> • Can determine the appropriate data for a study either with training in data collection or by use of a specialist in this area such as a statistician. • Knows limitations and understands the breadth of statistical methodology appropriate to robust data collection. <p>B. Helps to choose the model to be used.</p> <ul style="list-style-type: none"> • Uses knowledge and expertise to critically evaluate options available for model development • Helps to choose, with interdisciplinary experts, the correct model to develop. • Can explain the advantages and disadvantages of model choices and is objective in choosing the methodology. <p>C. Responsible for highlighting and in many cases resolving potential problems arising within models.</p> <ul style="list-style-type: none"> • Is responsible for a model, project or study and takes accountability for raising any issues both within the team and to senior staff or experts in the relevant areas • Takes responsibility for the team and the model build. • May recommend or undertake training, guide other team members, offer advice where problems are detected ensure that the team is working effectively.

Registered AI Practitioner

Competency		Evidence
<p>IV. Critical Evaluation</p>	<p>D. Supervises appropriate testing and validation of models.</p>	<ul style="list-style-type: none"> • Understands testing methodology and/or uses the appropriate specialist. • Understands AQuA book methodology and similar paperwork for verification and validation of models. • Supervises and implements testing methodologies for models, which could consist of user, model, assumption, implementation and data testing.
<p>V. Professionalism and Standards</p> <p>Demonstrates professional conduct; continuing professional development, learning and training.</p>	<p>A. Maintains (and may help to enhance) required professional standards at all times.</p>	<ul style="list-style-type: none"> • Maintains professional standards of the workplace, discipline and IST at all times. • May contribute too or establish working standards. • Employs Learning from Lessons (LfE) processes in the conduct of their work.
	<p>B. Complies with relevant IST, workplace and all other relevant codes of conduct at all times.</p>	<ul style="list-style-type: none"> • Complies with IST code of conduct, workplace code of conducts and all other relevant codes of conduct (in this example you would need to detail the relevant codes of conduct for you and explain how you follow them).
	<p>C. Engages and is self-starting in regular new learning and development.</p>	<ul style="list-style-type: none"> • Seeks out new information, knowledge and developments in their discipline. • Is proactive in their personal and professional development. • Maintains an up to date and relevant PPD record.
	<p>D. Exercises professional integrity and provides reasonable and proportionate challenge where necessary.</p>	<ul style="list-style-type: none"> • Can explain and justify, especially to non-specialists, good and bad outcomes and recognises and acts when work needs to be repeated or stopped. • Can evidence ethical, modelling methodology or quality-related objections.

Registered AI Practitioner

Competency		Evidence
V. Professionalism and Standards	E. May help/direct others with their learning/development.	<ul style="list-style-type: none"> • May train, advise or mentor colleagues. • May recommend training, guidance or mentoring for colleagues and team members.
	F. Maintains up-to-date and appropriate PPD/PPD records.	<ul style="list-style-type: none"> • PPD may include work based learning, professional activity, formal/educational/self directed learning. • Records their activities, progression and details the benefits to themselves and others. • Adheres to the IST PPD Guidelines.



Advanced AI Practitioner

Competency	Evidence
<p>I. Knowledge, Understanding and Application</p> <p>Has relevant knowledge and understanding of their field and applies their expertise in an appropriate manner.</p>	<p>A. Demonstrates leadership across a programme of work.</p> <ul style="list-style-type: none"> Leads multiple studies and programmes of work and may be accountable for multiple models or teams developing models. Leads and/or interacts with multiple specialist areas. Has good understanding of areas of work outside of their core discipline.
<p>B. Uses specialist knowledge and a broad understanding of their field.</p>	<ul style="list-style-type: none"> Has in depth and specialist knowledge of their discipline and industry. Uses their specialist knowledge to advise, train or recommend solutions to problems arising. Understands where their own or other specialist knowledge areas contribute to their field.
<p>C. Exercises sound judgement in the absence of complete information.</p>	<ul style="list-style-type: none"> Is able to decisively and clearly appraise and evaluate information and take decisions to solve problems. Is able to discern the absence of important data/information and its importance.
<p>D. Undertakes critical evaluation and proposes original solutions.</p>	<ul style="list-style-type: none"> Can critically evaluate new studies, proposals and recommendations. Can articulate their reasoning clearly and concisely. Creates new solutions to existing problems and helps to mitigate anticipated problems.
<p>E. Scopes, plans and manages complex projects.</p>	<ul style="list-style-type: none"> Is able to apply their experience and knowledge to plan and manage resources, budgets and personnel in an efficient and effective manner. Recognises interactions between projects and fields of work and anticipates conflicts.
<p>F. Generally takes overall responsibility for the project/study.</p>	<ul style="list-style-type: none"> Has overall accountability for a project or programme of work. Takes responsibility for the actions of the team and model development through good direction and guidance. Identifies knowledge shortfalls within their team/project and delegates tasks effectively to grow the group's knowledge.

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Competency	Evidence	
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>A. Takes responsibility for others with regard to ethical model use/development.</p>	<ul style="list-style-type: none"> • Directs the vision of the organisation and provides a role model to colleagues and team members. • Takes the lead on ethical model use/development and manages the risk in their project. • May create or advise on policies and takes responsibility for their implementation.
	<p>B. Implements solutions in a robust manner with due regard to ethical factors in terms of organisation, end-users and possibly society in general.</p>	<ul style="list-style-type: none"> • Understands that the concept phase of modelling is critical in designing models. Highlights potential model limits, risks and issues. • Ensures procedures for model development are robust and includes relevant activities such as; project justification, start up documentation, risk identification and management plan, society and user impact assessment, any relevant frameworks that need to be considered, identifying any critical issues that could be faced in the development whether practical or philosophical etc.
	<p>C. Knows how and when to seek guidance from others and escalate issues</p>	<ul style="list-style-type: none"> • Seeks guidance from the relevant specialist when required. • Understands own limitations and their team's potential. • Understands when and where to seek guidance. • Can use the correct channels for escalation where issues arise for their team and helps to promote and develop channels for escalation.
	<p>D. Takes responsibility for working practices with regard to existing and new ethical frameworks and guidance.</p>	<ul style="list-style-type: none"> • Leads and develops a culture of continuous positive development in terms of ethical frameworks. • Accepts challenge and welcomes the opportunity to critique own work. • Identifies existing and new frameworks for implementation in projects. • Is able to evaluate new guidance, identifying relevance to their work in a critical manner.
	<p>E. Contributes to the development and evaluation of new and existing ethical guidance.</p>	<ul style="list-style-type: none"> • Recognises gaps in existing guidance. • Leads and develops internal guidance on ethical development of models. • Contributes to or leads external guidance or working groups.

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Competency	Evidence
<p>II. Ethical Responsibility</p> <p>Demonstrates accountability, considers impact on society, users and stakeholders and uses robust processes.</p>	<p>F. Raises awareness of potential ethical issues arising within models and always seeks remediation of such issues if they are found to be present.</p> <ul style="list-style-type: none"> • Works with teams to understand risks and ethical issues within models, raises and highlights them in a timely manner. • Proposes or seeks guidance of a specialist to propose a solution or mitigation of ethical issues which is then implemented in a timely manner. <p>G. Takes responsibility for the correction of ethical issues arising within models in accordance with their institution's code of conduct/policies and relevant national and/or industry legislation, guidelines and/or agreed principles.</p> <ul style="list-style-type: none"> • Takes action to stop or pause work and act decisively and quickly to mitigate risks on the model development. • Takes accountability for lessons learned and works with others to ensure these lessons are implemented for the future. • Ensures actions are in accordance with their institution's code of conduct/policies and relevant national and/or industry legislation, guidelines and/or agreed principles.
<p>III. Interpersonal Skills and Communication</p> <p>Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.</p>	<p>A. Enhances strengths and mitigates weaknesses within teams to cultivate effective working relationships.</p> <ul style="list-style-type: none"> • Works with their team to determine weaknesses and to advise team members on training or mentoring. • Enhances the strengths of their team by adding to skills and knowledge. • Knows the team well and can delegate tasks effectively to enhance team performance. • Cultivates effective and positive working relationships in their organisation. <p>B. Leads interdisciplinary teams and delegates and directs a variety of tasks effectively.</p> <ul style="list-style-type: none"> • Can work with an interdisciplinary team and delegate the correct tasks to the correct person. • Allocates a variety of tasks both inside and outside their discipline. • Builds their team's awareness of other skills and disciplines outside of their core specialisation.

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Competency	Evidence
<p>III. Interpersonal Skills and Communication</p> <p>Ability to work within interdisciplinary teams constructively, to illustrate and communicate ideas and information effectively and to discuss issues in an objective and constructive manner.</p>	<p>C. Directs complex projects/studies and then present and defend the collective output.</p> <ul style="list-style-type: none"> • Is accountable for and leads teams in large and complex programmes of work or projects and studies. • Promotes a positive and cohesive team environment to ensure a good end goal is reached. • Can defend models and processes as well as the unpinning ethical principles used and is able to describe models simply to any audience. <p>D. Contributes to the improvement of diversity and inclusion within their area of work.</p> <ul style="list-style-type: none"> • Is aware of how diversity and inclusion can improve team performance and quality of output. • Uses proactive methods and early engagement to ensure quality, diversity and inclusion within their teams. • Is reflective in their actions and is proactive in reducing the impacts of their own biases, promoting the same within their team.
<p>IV. Critical Evaluation</p> <p>Applies knowledge appropriately, competently and self-critical in terms of all aspects of data handling; and the testing and validation data-based models.</p>	<p>A. Responsible for designing the project/study.</p> <ul style="list-style-type: none"> • May design and advise on complex studies or programmes of work. • Directs or advises on robust methods of data collection. • Generates plans that identify and co-ordinate resources efficiently and effectively. • Understands the project objectives and maintains consistency of the mission throughout. <p>B. Reviews a range of models that might be used often in consultation with other experts.</p> <ul style="list-style-type: none"> • Liaises with internal and external stakeholders on model choice. • Is able to identify benefits and risks of a range of models and their overall suitability. • Consults with specialists on model reviews and may interface with academia. <p>C. Responsible for resolving potential problems arising within models.</p> <ul style="list-style-type: none"> • Owns the risk within a project and uses effective processes to reduce and manage risk. • Takes accountability for potential adverse effects caused by a model either before or after implementation. • Actively seeks to scrutinise and challenge any perceived or actual risks.

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Competency	Evidence
<p>IV. Critical Evaluation</p>	<p>D. Takes ultimate responsibility for the project/study and its results.</p> <ul style="list-style-type: none"> • Is accountable for all aspects of modelling in order to rectify issues and avoid future failures. • Applies a just culture, avoids blame and seeks out lessons to be learned. Aims to improve own knowledge and awareness and that of their team and organisation. • Shares the lessons learnt to avoid similar failures.
<p>V. Professionalism and Standards</p> <p>Demonstrates professional conduct; continuing professional development, learning and training.</p>	<p>A. Maintains (and may help to enhance) required professional standards at all times.</p> <ul style="list-style-type: none"> • Maintains professional standards of the workplace, discipline and IST at all times. • May contribute to or establish working standards. • Upholds standards within their teams. • Employs Learning from Lessons (LfE) processes in the conduct of their work.
	<p>B. Complies with (and may help to enhance) relevant IST, workplace and all other relevant codes of conduct at all times.</p> <ul style="list-style-type: none"> • Complies with IST code of conduct, workplace code of conduct and all other relevant codes of conduct (in this example you would need to detail the relevant codes of conduct for you and explain how you follow them).
	<p>C. Engages and is self-starting in regular new learning and development.</p> <ul style="list-style-type: none"> • Seeks out new information, knowledge and developments in their discipline. • Is proactive in their personal and professional development and in assisting other professionals. • Maintains an up to date and relevant PPD record.
	<p>D. Exercises professional integrity and provides reasonable and proportionate challenge where necessary.</p> <ul style="list-style-type: none"> • Can explain and justify, especially to non-specialists, good and bad outcomes and recognises and acts when work needs to be improved or stopped. • Can evidence ethical, modelling methodology or quality related objections. • Promotes and invites challenge within their team and provides sound justification for the continuation of an action when challenged.

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Competency		Evidence
<p>V. Professionalism and Standards</p> <p>Demonstrates professional conduct; continuing professional development, learning and training.</p>	<p>E. Determines essential learning/development required for people they lead.</p>	<ul style="list-style-type: none"> Assists in the training, development or mentoring of early career colleagues. May recommend training, guidance or mentoring for colleagues and team members. Helps to identify organisational shortfalls and hire or retrain personnel to improve team performance and skills.
	<p>F. Directs others with regard to people development.</p>	<ul style="list-style-type: none"> Promotes mentorship, sharing of information and skills. Avoids group think and impeding individual development. Seeks and generates opportunities for others to broaden their skillsets.
	<p>G. Maintains up-to-date and appropriate PPD/PPD records.</p>	<ul style="list-style-type: none"> PPD may include work based learning, professional activity, formal/educational/self directed learning. Records their activities, progression and details the benefits to themselves and others. Adheres to the IST PPD Guidelines.

The IST AI Professional Accreditation was developed by a group of interdisciplinary AI specialists, in coordination with industry, academia and government.

Approved by partners from industry, academia and government.



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Supporting the technical workforce in the creative, digital, engineering and science technologies for 75 years