



MSc Artificial Intelligence Technology with Advanced Practice

London Campus

Level of study: Postgraduate

Mode of study: Full-time

Duration: 16-24 months

Response to Covid-19: Our focus is on providing a safe and welcoming learning environment and ensuring continued access to learning.

As a result of the coronavirus (Covid-19) pandemic and resulting social distancing requirements, we are intending to teach this course using a mix of on-campus and online learning activities. We continue to be guided by the Government to ensure our campus is Covid-secure. More information about our [response to Covid-19 and FAQs are available here](#).

All information is accurate at the time of sharing. Courses starting in 2021 are offered as a mix of face to face and online learning. We continue to monitor government and local authority guidance in relation to Covid-19 and we are ready and able to flex accordingly to ensure the health and safety of our students and staff. Contact time is subject to increase or decrease in line with additional restrictions imposed by the government or the University in the interest of maintaining the health and safety and wellbeing of students, staff, and visitors, potentially to a full online offer, should further restrictions be deemed necessary in future. Our online activity will be delivered through Blackboard Ultra, enabling collaboration, connection and engagement with materials and people.

Overview

Artificial Intelligence solutions become an inseparable part of our lives, driving demand on the job market for AI specialists. Gartner included AI in its top strategic technology trends for 2021; according to Forbes, 84% of global business organisations believe that AI will give them a competitive advantage.

MSc Artificial Intelligence Technology programme is focused on developing your abilities as a digital leader, capable of identifying and implementing technical solutions to deliver future improvements to your organisation.

Key facts

- Develop in-demand skills to work in a range of roles in the IT industry
- Train and deploy distributed machine learning modules using cloud-based platforms such as Google Cloud or AWS
- This programme has been designed to meet the accreditation criteria of BCS, the Chartered Institute for IT for the purposes of meeting the academic requirement for registration as a Chartered IT Professional
- The Advanced Practice includes an Internship or Group Consultancy Project, enhancing your employability with all-important work experience
- Upon completion of your programme, you will be eligible for the QA Professional Pathways programmes which will enable you to further develop your skills with one of the UK's largest providers of IT and project management training

Course information

Level of study: Postgraduate

Fee (UK/Home): £11,400

Fee (International): £19,000

Entry requirements: 2:2 honours degree, or equivalent in any subject IELTS 6.5, with no single element below 5.5, or equivalent .

English language requirements: IELTS 6.5, with no single element below 5.5 or equivalent

Mode of study: Full-time

Duration: 16-24 months

Assessment methods: Coursework

Scholarships or bursaries: available

Student finance: available

Payment plan: available

Starts: Jan, May, Sep,

About this course:

What will I study?

To accelerate your learning, you will be exposed to theories and principles relating to the design, development and

testing of software using AI. Students will learn programming with R and how to conceptualise software requirements into software architectural patterns.

Students will get insight into IoT peripherals, IoT data analytics and an overall grasp of how to incorporate local machine learning (ML) using Python Programming.

You will also be exposed to the fundamental concepts, principles, technologies, and techniques to train and deploy distributed machine learning models using a cloud-based platform such as Google Cloud or AWS. You will be able to apply this knowledge and skills in your context, and critically analyse the implementation and make recommendations for future improvements. You will additionally develop an understanding of the typology of innovation, how firms leverage internal and external resources to compete in the digital environment, and how to plan for innovation in any organisation.

How will I be taught and assessed?

- Teaching is delivered through lectures, workshops and tutorials totalling between **10-13 hours per week**
- You are expected to engage in independent study, around **30-32 hours per week**
- **Assessment** includes coursework, critical report writing, practical exercises, individual, group and research project work.
- Taught by **experienced lecturers and academics** who use their industry experience to demonstrate how theories translate into real-life situations.
- **Technology-enhanced** learning is embedded throughout the course to guide your preparation for seminars and independent research
- Benefit from **weekly academic support sessions** designed to build your ability and confidence as an academic learner
- You will be assigned a **guidance tutor** at induction who you will meet with regularly during your studies

Advanced Practice stage

The Advanced Practice version of this course offers you a valuable opportunity to secure a work placement, complete a group consultancy based on a real organisational issue or work with a research team on a research project. Successful completion of this Advanced Practice stage will provide you with experience of the workplace environment or live computing issues and an excellent way to put your learning into practice.

This stage of the programme will take place between your second and final semester and is a semester-long (15 weeks) in duration. Internships as part of the Advanced Practice stage may be paid or unpaid. The alternative research module allows you to work with an academic or applied research team within the university on a range of research topics. Whether you choose the Internship, Group Consultancy Project or the Research Project, you will successfully develop your business or research skills and further enhance your employability.

- **September start dates:** your programme will last for up to 21 months. You will have a summer break after Semester 2, and commence your Advanced Practice stage in September.
- **January start dates:** If you choose to start your Masters with Advanced Practice in January, your programme will run

for 24 months. You will commence the Advanced Practice stage of the programme in January following your taught stage and summer break. Please note that there are two summer breaks included in this programme for those starting in January.

- **May start dates:** your programme will run for 16-18 months. There is no summer break included in this programme for those starting in May. Your Advanced Practice stage will commence in January.

The Advanced Practice programmes are structured as below:

| | Sept-Jan | Jan-May | May-Sept | Sept-Jan | Jan-May | May-Sept | Sept-Jan |
|------------------|------------|------------|--------------|-------------------------|-------------------------|----------------|----------------|
| September starts | Semester 1 | Semester 2 | Summer break | Advanced Practice stage | Final semester | | |
| January starts | | Semester 1 | Summer break | Semester 2 | Advanced Practice stage | Summer break | Final semester |
| May starts | | | Semester 1 | Semester 2 | Advanced Practice stage | Final semester | |

Careers and further study

This Masters programme has been designed to ensure that graduates will be equipped with in-demand skills to work in a range of roles in the IT industry. Graduates can also progress to academic or research-orientated careers.

The qualification aims to accelerate your skills and competence in a range of job roles, including roles in leadership and management in IT as well as titles such as:

- Software Engineer
- Database Developer
- AI Data Analyst
- Information Security Professional
- Business Analyst
- AI Engineer
- Machine Learning Engineer
- Technologist – Artificial Intelligence

Upon successfully completing your course, you may undertake further professional development and training through Professional Pathways programmes. These are offered to our graduates for free, from our partner, QA. [Find out more information on Professional Pathways and your eligibility.](#)

[Enquire now](#)

Related reading

Advanced Practice:

- [Master Your Future: MSc with Advanced Practice](#)

- [What is a 'Masters with Advanced Practice' ?](#)
- [Infographic: The Stages of a Masters with Advanced Practice](#)
- [Studying a Masters with Advanced Practice](#)

Entry requirements

Academic requirements

- Minimum 2:2 honours degree, or above, or equivalent in any subject

If you don't meet the academic requirements

Applicants who are not graduates and do not hold professional qualifications of equivalent standing can also be considered for entry if they show evidence of strong motivation and capability for academic study and personal development (e.g. evidence of attendance at short courses) and/or suitable experience of working in areas which involve a significant amount of Information Technology.

Please visit our [entry requirements](#) page for country-specific qualifications.

Alternatively, you may also be eligible for our [Pre-Masters courses](#). These are pathway programmes designed specifically for students who are looking to progress on to a Masters degree but who don't currently meet the entry requirements.

English language requirements

- Students require an IELTS 6.5, with no single element below 5.5 or equivalent

If you have IELTS 5.5 – 6.0, you may be eligible to join our [Pre-Sessional English](#) before starting this programme.

[Enquire now](#)

Modules

All modules on this course are core and 20 credits unless otherwise stated.

Information Governance and Cyber Security

In this module, you will learn about the information governance and cyber security principles that underpin the management of an organisation's information assets. You will critically analyse the key concepts, theories, standards and frameworks of information governance and security, including risk management.

It will enable you to evaluate an organisation's current approach to information governance and cyber security. You will have the expertise to advise on the design and implementation of an appropriate strategy for managing an organisation's information (ensuring all assets meet legal, regulatory, organisational and/or societal needs for information governance and cybersecurity).

Leadership in a Digital Age

In this module, you will develop new knowledge and skills in leadership in a digital context. You will conduct a self-analysis of your own leadership and team management competencies and identify strengths and areas of improvement.

Leadership and team management capabilities are essential for your career development. They enable you to become competent at the visioning, development and deployment of technological strategies and responses to challenges and opportunities in complex operating environments.

Programming for AI

This module aims to provide you with in-depth knowledge and a critical understanding of AI-based algorithms and solutions. You will learn programming with R or a similar language and learn how to conceptualise software requirements into software architectural patterns and develop software using AI.

You will gain an understanding of various artificial intelligence algorithms, including statistical learning and machine learning models for data analysis. There will be a variety of use cases for implementing algorithms, visual perception and techniques and methods for different scenarios.

In addition to technical skills (e.g. statistical programming), you will also develop non-technical skills, including data-driven decision-making, critical thinking and communication skills. You will develop hands-on experience with tools and techniques illustrating principles that can be used in a wide range of areas outside of artificial intelligence.

Academic Language Skills for Computer and Information Sciences (0 credits)

This module is designed to support your transition in the use and practice of technical language and subject-specific skills around assessments and teaching provision in your chosen subject area.

The overall aim of this module is to develop your abilities to read and study effectively for academic purposes.

You will gain practical skills in analysing source material and using it in seminars and academic writing, whilst advancing your language and communications skills to a higher level.

Research Methods for Professional Practice

This module is designed to ensure you have the skills and knowledge to complete a postgraduate research project, relevant to AI and related technologies and your career or future aspirations.

As such, you will work closely with tutors and our careers and professional development specialists to consider the future opportunities post completion of your degree. You will develop a career plan and reflect on your learning considering how your learning from this module and the programme can accelerate the achievement of this plan.

To further prepare you for this final research project, this module will familiarise you with the nature of research and project management and the processes involved.

Artificial Intelligence for IoT

The module aims to provide you with a critical review of IoT based interconnected devices using AI functions and how this can benefit operational needs and demands to an organisation.

This module offers exciting learning opportunities where you will learn to architect IoT peripherals, cybersecurity, network connectivity, IoT data analytics and an overall understanding of how to incorporate local machine learning (AI) using Python Programming.

You will also learn AI/IoT based environments including how you will build IoT systems design using a diverse range of implementation techniques and methods. The module will further provide opportunities to appreciate the role that ethics, sustainability, privacy and security within the context of the use of Artificial Intelligence and its connectivity with IoT based systems in organisations.

Machine Learning on Cloud

The module aims to provide you with a critical review of the theory and practice of machine learning on the cloud platform. You will critically analyse the capabilities of machine learning and apply its methods and techniques to discover patterns for trends analysis.

The module will introduce you to neural networks and their implementation. You will train and deploy distributed machine learning models using cloud-based platforms such as Google Cloud or AWS or Microsoft Azure, or similar. You will develop skills on how to apply supervised, unsupervised and reinforcement learning using cloud platforms and tools such as TensorFlow or similar.

The module will provide opportunities to critically evaluate the role of ethics and sustainability within the context of the use of cloud-based machine learning application.

Computing and Digital Technologies Project (60 credits)

This module aims to enable you to undertake a substantial academic research project at the Masters level and present the results from this work in both written and oral forms. Your project itself will be a piece of independent and original research centred at the forefront of your programme discipline within the wider sphere of the computer science and digital technologies field.

You will experience the full life cycle of a research project- from initial conception and development of a research proposal, through a critical review of the literature, planning, design, implementation and analysis of your main research project, to final evaluation, reflection and dissemination.

You will be expected to consider and address the professional, ethical, legal and social issues related to this academic research project. You will also be expected to apply your expertise, project management and practical skills within your particular domain of computer science and digital technologies and demonstrate critical and innovative thinking and problem-solving within a research environment.

Your research proposal will normally have been produced as part of an earlier module on research and project planning

but should be reviewed again at the start of the project phase to ensure it is still valid and appropriate.

Advanced Practice stage

You will choose one of the following modules:

Engineering and Environment Advanced Practice London Campus – Consultancy Project (60 credits)

This module aims to provide you with an experiential learning opportunity where you will work on a group consultancy project that utilises skills and knowledge acquired during the taught part of your study programme. You will work as a team of 3-5 students on a project for a real-world organisation and be supported by an experienced academic supervisor throughout your project.

You will learn to work independently and develop resilience and flexibility as you adapt to a different learning environment, and gain a new perspective through comparison with your taught studies. The module will help you develop your abilities as a problem solver with valued investigative, theoretical and practical skills to implement a work-based consultancy project. Through this consultancy project, you will help develop hands-on experience of working on a real-life project that experience is directly transferrable to be utilised to the world of work after your graduation.

Engineering and Environment Advanced Practice London Campus – Research Project (60 credits)

The Advanced Practice Research Project module is designed to deepen your knowledge and enhance your research skills in your specialist field. The aim of this module is to provide you with an opportunity to work on a research study that utilises skills and knowledge acquired during the taught part of your study programme. You will be supported by an experienced academic supervisor who would provide guidance at different stages of this research project.

A high level of participation will be required from you to undertake this research project. Independent learning will help you focus on identifying and pursuing areas of interest in relation to the research study or by providing deeper/broader knowledge and understanding of the subject through a range of learning activities that might include extended reading, reflection, research etc and application of these to your research-based project. You will learn to work independently and develop resilience and flexibility as you adapt to a different learning environment, and gain a new perspective through comparison with your taught studies. The module will help you develop your abilities as a researcher with valued investigative, data analytical, theoretical and practical skills to implement a research project

Engineering and Environment Advanced Practice London Campus Internship (60 credits)

This Advanced Practice module is designed to deepen your knowledge and enhance employability in your specialist field. This module aims to provide you with an experiential learning opportunity in a workplace setting that utilises skills and knowledge acquired during the taught part of your study programme. You will develop resilience and flexibility as you adapt to a different learning environment, and gain a new perspective through comparison with your taught studies.

You will be allocated an academic supervisor who would provide you with support throughout your internship.

Assessment on the module is designed to focus on the awareness of the impact of the time spent in an external learning

environment, on your knowledge and understanding of the discipline. You will be encouraged to critically engage with outside practices, and to reflect on your educational development in the context of the challenges posed by an unfamiliar social, cultural and economic environment.

[Enquire now](#)

Fees and finance

Tuition fees 2021/22

- **UK/Home students:** £11,400
- **International students:** £19,000

Tuition fees 2022/23

- **UK/Home:** £12,075
- **International students:** £19,500

Please note that your tuition fees do not include the cost of course books that you may choose to purchase, stationery, printing and photocopying, accommodation, living expenses, travel or any other extracurricular activities. As a Northumbria University London Campus student, you will have full access to our online digital library with over 400,000 e-books and 50,000 electronic journals.

What's included in your tuition fees?

Your tuition fees cover far more than your time in class with our expert academics, it covers the cost of providing you with excellent services and student experience.

- Contact time in class – typically in lectures, seminars and tutorials
- Access to facilities, including computers, on-campus Wi-Fi, printers, vending machines, quiet study spaces
- The support of our Careers & Employment Service helps you to become more employable, secure placements and run workshops
- Academic support – our ACE Team run multiple sessions on academic writing, presenting, exam techniques throughout the semester, as well as 1-2-1 appointments and drop-in sessions
- Student support services such as our Ask4Help Service. Find out more about the services available to you on our [Student Support](#) page
- Access to online resources, including 24/ 7 Library with over 400,000 e-books and 50,000 electronic journals.

Scholarships and bursaries for international students

If you are an international student and choose to study the full-time programme, you will be eligible for either our programme bursary or a country bursary, whichever is greater. High performing students may be eligible for an academic scholarship in addition.

Depending on the country you are from, you may be eligible for one of our country bursaries and/scholarships to help finance your studies.

All of our scholarships and bursaries are automatically applied when we process your application and our team will be able to confirm your eligibility.

[Scholarships and bursaries](#)

Payment plans for self-funded students

If you need to spread the cost of your tuition, you may be eligible for our payment plan.

[Payment plans](#)

Government Loan for Masters study

If you are a UK/Home student, you may be eligible for a postgraduate loan of up to £10,000+ from the UK Government. Click [here](#) to find out more about the loan and whether you are eligible to receive it.

[Postgraduate Loan](#)

How to apply or find out more

How to find out more

Enquire now to find out more information about the course, studying with us, the application process, and to ask any other questions you may have.

[Enquire now](#)

How to apply

Once you're ready to apply, you can apply online to study MSc Artificial Intelligence Technology. This method allows you to upload your supporting documents at the time of application and automatically receive your student application number.

[Apply online](#)

We strongly recommend that you submit your application as early as possible to allow you to complete all of the preparations needed to study your programme. After receiving an offer it can take time to arrange your finances and apply for your visa (if required) and it is important that you arrive in good time to enrol onto your course. Please refer to the [Dates and Fees](#) page.

If you are unable to apply online, then you can download a PDF application form and email it to london.admissions@northumbria.ac.uk.

[International students application form](#) [UK/Home students application form](#)

Supporting documents

For us to assess your application in a timely manner, it is important that you provide us with the following documents:

- Fully completed application form
- A personal email address must be included on the application form
- Transcripts and/or certificates (including a certified translation if not in English)
- Passport – a copy of personal details page
- Proof of financial sponsorship if applicable
- Reference
- Confirmation of immigration history including copies of previous and current visas if applicable

You can check more information on [how to apply here](#), including guidelines for the application forms.