WM9QG-30 Fundamentals of Artificial Intelligence Research, Development and Management

25/26

Department
WMG
Level
Taught Postgraduate Level
Module leader
Awinder Kaur
Credit value
30
Module duration
7 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module provides participants with essential knowledge related to the MSc Artificial Intelligence course focusing on managerial and research aspects with the field of Artificial Intelligence. It offers practical guidance on conducting academically rigorous and technically proficient research projects emphasizing the importance of adhering to sound academic and research practices. Students will gain a comprehensive understanding of the primary research methods and techniques applicable to technical projects, project planning and their implications for businesses. Furthermore, the module explores the alignment of student work with contemporary roles in Artificial Intelligence development highlighting how their contributions can effectively support these roles.
This module is designed to provide students with a solid academic foundation in research methods while offering comprehensive insights into the opportunities, challenges, emerging trends, and critical issues with the realm of Artificial Intelligence.

Module aims

This module will give students an academic grounding in research methods and an in-depth knowledge of the opportunities, challenges, trends and issues facing the field of Artificial Intelligence.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Introduction to the research process; Understanding and completing a literature review, focusing on the four key stages: searching. synthesising, evaluating and writing; Critical thinking; Project planning and management; Study skills to undertake a technical project; An introduction to the structure and form of an academic document and technical reports; Generating a Research Outline; key drivers, players, standards and road maps driving the industry; current opportunities, challenges, trends and issues faced in the Artificial Intelligence field.

Learning outcomes

By the end of the module, students should be able to:

- Design strategies for the project plan using critical thinking techniques and apply them effectively to the academic writing process.
- Create a Research/Project Outline and Plan demonstrating autonomy in project design and execution.
- Synthesize the capacity to conduct a thorough and comprehensive literature review, enhancing research and analytical skills.
- Devise strategies for navigating opportunities and challenges in Artificial Intelligence based on the understanding of the diverse opportunities, challenges, and pivotal roles within the Artificial Intelligence area.
- Deliver a presentation on Artificial Intelligence technology that clearly explains its impact and opportunities to both technical and non-technical audiences, showcasing an understanding of Artificial Intelligence's role in the industry.

Indicative reading list

Cottrell, S. 2014, Dissertations and project reports: a step by step guide, Palgrave Macmillan, Houndmills, Basingstoke, Hampshire.

Furseth, I. & Everett, E.L. 2013, Doing your master's dissertation, Sage, Los Angeles.

Biggam, J. 2015, Succeeding with your master's dissertation: a step-by-step handbook, Third edn, Open University Press, Berkshire, England.

Koepsell, D.R. 2017, Scientific integrity and research ethics: an approach from the ethos of science, Springer, Cham, Switzerland.

Jonker, J. & Pennink, B.J.W. 2010, The essence of research methodology: a concise guide for master and PhD students in management science, Springer, London;Berlin

Hering, L. & Hering, H. 2010, How to write technical reports: understandable structure, good design, convincing presentation, Springer, Heidelberg;New York

Cottrell, S. 2017, Critical thinking skills: effective analysis, argument and reflection, Third edn, Palgrave Macmillan, London.

Marquis, Pierre (Professor of Computer Science), Papini, O. & Prade, H.M. 2020, A guided tour of artificial intelligence research: AI algorithms, Springer, Cham.

Research element

Research element will be around research methodologies which constitutes a significant part of this module. Students will be expected to search the literature for adequate publications, be able to summarise and present them. They will be able to analyse the work critically and develop their own research strategies.

Interdisciplinary

This module equips participants with practical guidance on how to conduct an academically sound and technically robust research project by exploring the key elements of good academic and research practice. It also provides a practical understanding of the major research methods and techniques used in project work along with the core concepts in developmental research and the related business aspects within the AI field.

Subject specific skills

Within the research fields around AI, students will learn to:
Make appropriate use of academic and professional resources.
Communicate ideas, principles and theories effectively in written form.
Search appropriate literary sources and databases for relevant information.
Read academic texts critically and effectively.
Construct and present bibliographies and references.
Develop an academic writing styles.
Prepare and deliver presentations.

Transferable skills

Critical thinking
Communication
Writing skills
Information Literacy (research skills)

Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (3%)
Seminars	20 sessions of 1 hour (7%)
Project supervision	15 sessions of 1 hour (5%)
Other activity	135 hours (45%)
Assessment	120 hours (40%)
Total	300 hours

Private study description

No private study requirements defined for this module.

Other activity description

135 hours: Under the direction of the project supervisor (hours highlighted above) the students will spend these hours as self-directed study to complete their Project Plan which includes critical review of relevant literatures and project outline.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Individual Presentation	30%	36 hours	No
Students will present aspects of Artificial Intelligence technology. The presentation will be aimed at technical and non-technical Artificial Intelligence roles that would be available in an industry.			
Assignment	70%	84 hours	Yes (extension)
Project Plan which includes Critical Review and Research Outline.			

Feedback on assessment

Verbal feedback for individual presentation. Written feedback for assignment.

Availability

There is currently no information about the courses for which this module is core or optional.