

Module Details	
Module Title	AI Project Design and Development
Module Code	GAV4017-D
Academic Year	2022/3
Credits	40
School	Department of Media Design and Technology
FHEQ Level	FHEQ Level 4

Contact Hours	
Type	Hours
Lectures	8
Project Supervision	14
Laboratories	14
Seminars	40
Directed Study	324

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims
<ul style="list-style-type: none"> * To teach the essential principles of Artificial Intelligence (AI) Project Management. * To provide an introduction to the foundations of AI project development lifecycle. * To work on AI solutions individually and collaboratively and evaluate the effectiveness of this work. * To provide practical hands-on experience by designing and evaluating a prototype AI application using current programming languages.

Outline Syllabus

A typical syllabus will cover the following:

SOFTWARE DEVELOPMENT LIFE-CYCLE (SDLC):

Introduction to SDLC. Learn the fundamental concepts of SDLC, project management, and teamwork. Discussion on SDLC activities; planning, analysis, design, implementation, testing and deployment. Overview of different SDLC models such as waterfall, iterative, agile and rapid application development.

AI PROJECT DEVELOPMENT:

AI project development life cycle with an example case-study; Examining those unique aspects of AI SDLC with one given example case-study. Designing a prototype AI solution: Identify a potential AI solution to specific briefs; Design a solution by adopting AI project development life cycle activities; Identify the relevant methods and tools for the development of an AI solution.

COLLABORATIVE WORKING:

managing and contributing to group projects, problem-solving, providing and taking constructive criticism, reflecting on group and individual performance and areas of development.

Learning Outcomes

Outcome Number	Description
01	Explain basic concepts in a software development lifecycle
02	Examine the key components of the project life cycle of AI software solutions
03	Design and develop a prototype AI software solution to a given problem, using appropriate methods, tools and project development life cycle activities
04	Evaluate and reflect on the effectiveness of the project, both in terms of the final prototype solution and the execution of the project

Learning, Teaching and Assessment Strategy

This module is delivered through formal lectures, computer lab sessions, seminars, independent study and project supervision and brings together and builds on the theoretical knowledge and practical skills developed in the other core level 4 modules of the programme.

Formal lectures outline the theoretical principles of AI-based software development life cycle (SDLC) and each phase of SDLC will be explained using examples from existing AI solutions. These are explored further and linked to the summative AI project assessment for the module in seminar sessions.

Laboratory and supervisory sessions are used throughout the module to help students work through the practical tasks relating to their final project and summative assessment. Supervision sessions will also be used to discuss the effectiveness of the project management/coordination of each group and to encourage peer-to-peer feedback.

Students will be introduced to literature review methods, academic writing including referencing, plagiarism checks and mechanisms of peer-review.

During independent study, students are expected to work in groups on their given project briefs and individually on their critical reflections. They will be supported to structure their independent study via direction from their project supervisor and scaffolded tasks provided in seminars, such as:

- Identifying key elements of AI projects and phases of AI project development life cycle
- Exploring the background of a given problem using existing literature
- Developing a project plan/proposed solution
- Understanding and processing open-access datasets
- Evaluating project phases and giving/receiving peer feedback
- Developing and testing a prototype
- Presenting a prototype

Students will complete formative tasks throughout the module and will receive feedback in seminar sessions and during project supervision sessions. Structured opportunities to give and receive peer feedback will also be built into these sessions and students will be expected to reflect on and use this feedback to inform their Critical Reflection assignment.

The summative assessment for this module revolves around the practical implementation of an AI solution to a given problem using an open-access dataset. Students will work in groups to explore the background of the problem using existing literature, understand the datasets, process the data, and bring this together to develop a prototype AI solution, using key AI/software development project management techniques.

The first assignment takes the form of a live demonstration of each group's AI solution and contributes 40% to the module mark. Students will receive a group mark for the demo assignment. However, student contribution to the group assignment will be monitored and marks for individual students may be adjusted for non-engagement. There will be 10 minutes demo for each of the three sub-projects (30 minutes in total). Presentation of the developed AI prototype solutions will be assessed on the following categories:

- Explanation of the context and the extent to which the problem has been addressed;
- The solution arrived at and the level of critical reflection on the process and outcome;
- The level of teamwork as well as Individual contribution.

The final assignment of the module contributes 60% and takes the form of an individual critical reflection, in which students will be expected to reflect not only on the effectiveness of their demoed AI solution, but also on the effectiveness of their project, group work and individual contribution. Sections of the Reflection will include:

- Outline of AI project development phases;
- Exploration of given group problem;
- Summary of solution;
- Evaluation of solution;
- Evaluation of project execution/group work/individual contribution;
- Peer feedback.

Any supplementary assessments will be as original except in instances where an individual student is required to re-sit the group demo assignment. In this scenario, the individual student will be asked to present a brief summary/demo of the proposed group solution appropriate to the expected individual contribution in the original group assignment.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Presentation	Live demonstrations of group prototype AI solutions for 3 given problems. SUPPLEMENTARY: Individual demo of group soluti	40%
Summative	Coursework	Critical reflection of group project (individual assessment)	60%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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