

Research-led Teaching for A MSc AI Programme

Yaxin Bi

School of Computing, Ulster University, UK

ABSTRACT

This paper presents our approach to incorporating our research into a MSc Artificial Intelligence (AI) programme that is currently run at the School of Computing, Ulster University. MSc students have diverse backgrounds in knowledge, experience and culture. Through the MSc course training, students expect to have a broad of employment opportunities or further career development opportunities. Therefore, the best practice would be the MSc programme should provide students with opportunities to understand the importance of research within their educational journey and to study state of the art methods and techniques. The aims of the course should be focused on developing their cognitive skills whilst conducting problem solving for research and application, thereby meeting the demands of science and industry in employment markets.

The aim setting provides a clear guideline for module design, deep machine learning has been selected as one of core modules since this subject is currently a hot topic in the AI area and is playing increasingly important roles in sciences, industries and our daily lives. To provide MSc students with both challenge and opportunity, the contents of the module and topics of coursework have been set in alignment with the latest development of deep learning and practical applications. This strategy keeps the module contents research informed and encourages students approximate working in the tutor and research teams and to be an integral part of assessing process. Specifically the assessment requires the students to conduct the literature, have appropriate appreciation to deep learning and application areas, implement algorithms. These assessment requirements not only allow students to develop a set of problem solving skills, but it also focuses on development of their attributes of creativity, communication, team working, thereby enabling students to build skills relevant to industry and research careers in addition to conducting research in larger teams. This paper introduces our experience of running the deep learning module in connecting our forefront of research with our teaching.

Keywords: research-led teaching, pedagogy, curricula development, assessment