

Applied AI and System AI (for Science, Health, Engineering and Social Humanity)

Supervision team

Main Supervisor: Dr Jichun Li, email: Jichun.li@ncl.ac.uk

Co-supervisors: Prof Natalio Krasnogor; Prof. Boguslaw Obara; Dr Huizhi Liang;
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Research project

I am always looking for highly motivated PhD students who are interested in research in applied AI and system AI at the interface of computing science (algorithm, NLP, image processing), natural science (biology, physics, and chemistry), social science (human computer interaction, design, finance, and management), robotics, and automation. I am accepting PhD applications all year round. Example ideas are but not limited to listed below:

1. **Novel AI algorithms for image processing, navigation, localization, and human-robot-interaction in robotics:** One research topic will be focused on anomaly detection. Outlier detection aims to identify data anomalies exhibiting significant deviations from normal patterns. However, existing outlier detection methods often struggle with challenges such as increasing outlier counts and cluster formation issues. I am interested in studying novel outlier detection methods and their applications to biology, disease diagnosis for medical and industrial applications, etc.
2. **AI for engineering, specifically robotic platforms for various applications such as lab automation, agriculture, healthcare, and manufacturing.** Specifically, there are many interesting fields to investigate on AI specifically LLM for robotic applications such as Smart (multifunctional sensor with AI technology), Safe (human-robot interaction with state of art AI technology), and Service (autonomous self-maintenance) .
3. **AI for science, specifically in biology and brain sciences.** Specifically, the research will focus on molecular communication, DNA storage, computational model of microbial metabolism for rational design of sustainable cell factories in low-carbon value-added production, and AI for diagnosis for brain disease .

Applicant skills/background

BSc/BEng 2:1 or a MSc/MEng Degree.

References

<https://www.ncl.ac.uk/computing/staff/profile/jichunli.html>;
<https://www.ncl.ac.uk/computing/staff/profile/nataliokrasnogor.html>
<https://www.ncl.ac.uk/computing/staff/profile/boguslawobara.html>
<https://www.ncl.ac.uk/computing/staff/profile/xinhuanshu.html>
<https://www.ncl.ac.uk/computing/staff/profile/huizhiliang.html>
<https://www.ncl.ac.uk/computing/staff/profile/leishi.html>