Lun Ai

Contact

Email: lun.ai15@imperial.ac.uk Website: lai1997.github.io
Linkedin: linkedin.com/in/lun-ai/ Mobile: +44 (74) 2317 8092

Research Interests

- Inductive Logic Programming, Program Induction, Program Synthesis
- Systems Biology, Computational Scientific Discovery
- Machine Learning Comprehensibility, Explainable AI

Education

PhD, Computing Science, **Imperial College London, UK** 09/2019 -

Thesis: Effects of Machine-Learned Logic Theories on Human Comprehension in Machine-Human Teaching

Methods: Inductive Logic Programming, Explainable AI

Viva date: 28/09/2023

MEng, Computer Science (Artificial Intelligence, 2:1), **Imperial College London, UK** 10/2015 - 06/2019

Employment

Research Assistant, Imperial College London, UK

Project BBSRC AI-4-EB 23/10/2022 -

Developed an AI framework to accurately learn gene functions economically

Methods: Inductive Logic Programming, Systems Biology

Project EU Horizon TAILOR 19/11/2020 - 22/10/2022

Created a framework for quantifying human comprehension of AI explanations

Methods: Inductive Logic Programming, Explainable AI

Research Support Officer, Imperial College London, UK

Network EPSRC Human-Like Computing 11/05/2020 - 18/11/2020

Co-organised the 2nd International Joint Conference on Learning and Reasoning

Software Engineer, Schlumberger Technology Center, Norway 04 - 09/2018

Developed a backend ML application for analysing geographic data in the Google Cloud platform

Skills: Tensorflow, Pytorch, Google Cloud, Docker, Matlab, Python, C#

Software Engineer Part-time, LV8Sports, UK 11/2017 - 07/2018

Created a prototype of a mobile physical training assistant on the Android platform at a startup

Skills: OpenCV, Android, Java, C++

Software Engineer Intern, Yiwei Tech, China 07 - 09/2016

Built a browser prototype web service for mobile video streaming at a startup

Skills: HTML, Javascript, Java

Organisation

Organising Committee of the 2nd International Joint Conference on Learning and Reasoning, IJCLR 2022

Evidence of Esteem

Program Committee/Reviewer

The 39th International Conference on Logic Programming, ICLP	2023
The 45th Cognitive Science Society Conference, CogSci	2023
Machine Learning Journal, MLJ	2023
The 2nd International Joint Conference on Learning and Reasoning, IJCLR	2022

Awards

The Best Poster, Imperial College Poster Competition	2021
Overall Best Project, Microsoft 3Hack Hackathon Imperial College London	2017
Entry Scholarship, Imperial College London	2015

Publications

Pre-print

L. Ai, S.-S. Liang, W.-Z. Dai, L. Hallett, S. H. Muggleton, and G. S. Baldwin. Human comprehensible active learning of genome-scale metabolic networks. arXiv, Aug. 2023. doi:10.48550/arXiv.2308.12740.

Journals

L. Ai, J. Langer, S. H. Muggleton and U. Schmid. Explanatory machine learning for sequential human teaching. Machine Learning, 112:3591–3632, 2023. doi:10.1007/s10994-023-06351-8.

L. Ai, S. H. Muggleton, C. Hocquette, M. Gromowski and U. Schmid. Beneficial and harmful explanatory machine learning. Machine Learning, 110:695-721, 2021. doi:10.1007/s10994-020-05941-0.

Oral presentations

L. Ai, S.-S. Liang, S. H. Muggleton, and G. S. Baldwin. A Comprehensible Framework to Active Learning Genome-Scale Metabolic Networks, Nov. 2023. AAAI Fall Symposium on Artificial Intelligence for Synthetic Biology, Online.

L. Ai, J. Langer, S. H.Muggleton and U. Schmid. Explanatory machine learning for sequential human teaching, Nov. 2023. The 3rd International Joint Conference on Learning & Reasoning, Online.

L. Ai. Effects of explaining machine-learned logic programs for human comprehension and discovery, Nov. 2023. The Dagstuhl Seminar on Approaches and Applications of Inductive Programming, Schloss Dagstuhl, Germany.

L. Ai. Explanatory machine learning for sequential human teaching, Sep. 2023. Imperial College London explAIn Technical Workshop on Explainable AI, Interactivity, and Natural Language, London, UK.

L. Ai, S.-S. Liang, W.-Z. Dai, L. Hallett, S. H. Muggleton, and G. S. Baldwin. Active Learning of Genome-Scale Metabolic Networks via Abduction, July 2023. Nanjing University AI Summer School, Online.

L. Ai, S.-S. Liang, S. H. Muggleton, and G. S. Baldwin. AI-4-EB Network Engineering, Apr. 2023. AI-4-EB AI and Engineering Biology Consortium, London, UK.

L. Ai, S.-S. Liang, W.-Z. Dai, L. Hallett, S. H. Muggleton, and G. S. Baldwin. Human comprehensible active learning of genome-scale metabolic networks, Mar. 2023. AAAI Spring Symposium on Computational Approaches to Scientific Discovery, San Francisco, USA.

L. Ai, S. H. Muggleton. Effects of machine-learned logic theories on human comprehension, July. 2022. Imperial College London Explainable AI Seminar Series, London, UK.

L. Ai, S. H. Muggleton, C. Hocquette, M. Gromowski and U. Schmid. Beneficial and harmful explanatory machine learning, Oct. 2021. The 1st International Joint Conference on Learning & Reasoning, Online.

L. Ai, S. H. Muggleton, C. Hocquette, M. Gromowski and U. Schmid. Beneficial and harmful explanatory machine learning, Sep. 2021. The Trustworthy AI Through The Integration Of Learning, Optimisation & Reasoning Conference, Online.

L. Ai, S. H. Muggleton, C. Hocquette, M. Gromowski and U. Schmid. Beneficial and harmful explanatory machine learning, May. 2021. The Dagstuhl Seminar on Approaches and Applications of Inductive Programming, Online.