

Xingran Ruan

Curriculum vitae

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Education

2021–Present **PhD.**, *Computer Science*, University of Edinburgh, United Kingdom

This PhD research project aims to investigate intelligent software for Autism Spectrum Disorder using machine learning techniques, which will use Reinforce learning to build a game-like agent for improving their learning ability. Also, this project will consider the way to speed up the Agent's training process and deploy such educational software on various terminals such as smartphones, iPad, laptops, etc...

2019–2021 **M.Phil.**, *Computer Science*, University of Manchester, United Kingdom

This Mphil research project aims to optimise the load balance in parallel threads using static loop scheduling schemes.

2018–2019 **M.Sc.**, *Applied Mathematics*, University of Edinburgh, United Kingdom

Final Grade: Merit

The M.Sc. dissertation is based on the Feynman–Kac formula to prove the error of the numerical solution of the stochastic process that pricing an EU option is converged in probability.

2014–2018 **B.Sc.**, *Applied Mathematics*, Chongqing University of Technology, China

Final GPA: 3.86/5.0

Scholarship throughout 2015–2018

Mphil's thesis

title *Load Balance for Parallel Loop Scheduling*

supervisors Prof. Rizos Sakellariou

This thesis considers the load imbalance achieved by different loop partitioning and scheduling approaches with various classical benchmark applications. In addition, it proposes a combined canonical loop scheduling scheme to reduce load imbalance when dealing with Gaussian-type loop nests.

Research experience

2018 **Undergraduate student at Chongqing University of Technology**

Advisor: Prof. Guichen Lv

I was a member of Prof. Chen's research group and his group was working on 'Differential Equation Modelling and Application towards Bacterial Population'. During my work period, I successfully proved the given partial differential equation system will be converged with time moving.

2017 **Undergraduate student at Chongqing University of Technology**

Advisor: Prof. Ruihua Liu

I was a member of Prof. Liu's research group and his group was working on 'Estimate Protein Rate in Pork Production'. During my work period, I pre-processed the raw data and selected the key features by principal component analysis. Based on that, I build the linear regression between the key features and protein rate by partial least squares regression.

Work experience

2019–2020 **MPhil student at the University of Manchester**

Teaching Assistant: Foundations Machine Learning

Teaching Assistant: Modelling and Visualisation

Teaching Assistant: Mathematical Techniques for Computer Science

2021–2022 **PhD student at the University of Edinburgh**

Marker: Machine Learning Practical

Marker: Data Analytic with High-Performance Computing

Tutor/Marker: Informatics Project Proposal

2022–present **Data Engineer (eMoodie)**

We are currently expanding the screening technology using deep learning AI to assess stress levels and burnout risk.

Languages

Chinese Native

English Fluent

Computer skills

Programming C, Python, Matlab

OS Linux (Ubuntu)

Deep learning frameworks Keras, Tensorflow

Publications

- 2022 Ruan, X., Palansuriya, C., & Constantin, A. (2022). Real-time feedback based on emotion recognition for improving children's metacognitive monitoring skill. *Interaction Design and Children*, 672–675.

Awards

First Prize and Innovation Prize, Graphene Hackathon (2019, United Kingdom)

Chinese National Scholarship (2018, China)

First Degree Scholarship, Chongqing University of Technology (2016–2018, China)

Chongqing Second Prize, The Chinese Mathematics Competitions (2017, China)

Honorable Mention, Mathematical Contest In Modeling (2016, United States)

Second Degree Scholarship, Chongqing University of Technology (2015, China)