

# Hao Xu

High Performance Computing with Data Science postgraduate student at the University of Sussex

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## ACADEMIC EXPERIENCE

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### University of Edinburgh, Edinburgh, UK

*MSc in High Performance Computing with Data Science*

Sept, 2024 - Sept 2025

- Most modules (*which will be taken*) are HPC related: Thread Programming, Message-Passing Programming, Advanced Message-Passing Programming, Performance Programming, HPC Architecture, Accelerated Systems: Principles and Practice
- The left modules (*which will be taken*) are Machine Learning related: Fundamental of Data Management, High Performance Data Analytic, Machine Learning and Pattern Recognition, Machine Learning at Scale, Reinforcement Learning

### University of Sussex, Brighton, UK

First Honor

*BSc in Computer Science & Artificial Intelligence*

Sept, 2022 - June 2024

- Most modules are Computer Science and Artificial Intelligence based: Fundamentals of Machine Learning; Computer Visions; Neural Network; Natural Language Engineering; Advanced Natural Language Engineering; Acquired Intelligence & Adaptive Behaviour (Evolutionary algorithms and Genetic algorithms); Knowledge & Reasoning (Search algorithms, Heuristics, Semantic networks, and Bayesian networks); Databases; Program Analysis (Algorithms analysis); Introduction to Computer Security; Human-Computer Interaction
- Left modules are Neuroscience and Linguistics based related to AI: Principles of Neuronal Function & Dysfunction; Language, Mind and Brain

### Soochow University, Soochow, China

Grade: 84%

*International Bachelor-Sussex Excellence AI Programme at Soochow University*

Sept, 2019 - Jun, 2021

- Most modules are Computer Science and Mathematics based: Calculus; Linear Algebra; Probability Theory; Discrete Mathematics; Data Structure; Python Programming; JAVA Programming; Network Programming; Microcomputer Principle & Interface Technology (Microcomputer systems principle and Assembly language programming); Databases; Software Engineering
- Left modules are Artificial Intelligence based: Introduction to Artificial Intelligence; Machine Learning; Computer Visions

### Junior Research Associate: ML for Cell Classification from Partial Information

*Supervised by Dr Ivor Simpson at University of Sussex*

Jul, 2023 - Sept, 2023

- Do segment on cell micrographs, generate complete four-channel cell micrographs and classify the cycle phase
- Fine-tune CellPose, build and train VAE and CNN classifier in PyTorch

## EMPLOYMENT HELD

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### Natural Language Engineering Teaching Assistant | University of Sussex

Oct, 2023 - Dec, 2023

- \* Teach second-year undergraduate students the fundamental principles of the module NLE.
- \* Teach the Natural Language Engineering labs, take students through the coding problem set
- \* Help struggling students solving exercises

### Intern in AI R&D department | Focus Technology Co., Ltd.

Sept, 2021 - Jun, 2022

- \* Involve in image data cleaning, image classification, and object detection with Yolo
- \* Use image matting to refine the pixels of items edges to make the extracted item sharper
- \* Train CLIP models for Ali Tianchi's CVPR 2022 AliProducts Challenge for text-image retrieval

### Intern in Data Analysis department | Nanjing Maiyuchuang IT Co., Ltd

Jun, 2021 - Aug, 2021

- \* Involve in the development of the opinion analysis system
- \* Crawl news with Scrapy and Pre-processing news data
- \* Train BERT to implement sentiment classification and text classification functions

## SKILLS

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- \* Proficiency in Python, including machine learning libraries such as Numpy, Pandas, Matplotlib, PyTorch, etc.
- \* Proficiency in Linux, SQL
- \* Knowledge of essential machine learning, computer vision and natural language processing algorithms
- \* Ability to reproduce deep learning cutting edge literature
- \* Ability to read and write C and Java code
- \* Ability to use Git, Docker
- \* Good foundation in mathematics