

Yeshuai Cui

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EDUCATION

Imperial College London

London, United Kingdom

MSc Advanced Computing

2022/09 – 2023/09

Courses:

- Computational Finance: Brownian motion, Arbitrage, Option pricing, Black and Scholes model.
- Scalable System and Data: BigTable, Dynamo, Spanner, Spark, Memory indexing, Zookeeper.
- Reinforcement Learning: Markov Process, Bellman Optimality, TD, Q-Learning, DQN.
- Computer Vision: Harris Corner Detector, SIFT, Epipolar Geometry, Optical Flow.
- Scheduling and Resource Alloc: Moore-Hodgson, Muntz-Coffman, Potential Games, Auctions.
- Deep Learning: GoogLeNet, ResNet, VAE, GAN, RNN, Attention, Diffusion
- Machine Learning for Imaging: Registration, YOLO, Atlas, Federated learning, Interpretability
- Natural Language Processing: Encoding, RNN, LSTM, AutoEncoder, Transformer, Bert, GPT
- Cryptographic Engineering: Perfect Secrecy, HASH, MAC, Commitment. 0 knowledge proof

King's College London

London, United Kingdom

Bachelor of Science (Hons) Computer Science, First-Class

2019/09 – 2022/06

Three Year Average:

81/100

Group Project:

A.I.D. Application for Intervening Depression

This project aims to deliver therapy to those patients with psychiatric disorders. The deliverables of this project include a mobile app using Flutter for patients, admin webpage for data collection and training items set modification, and MongoDB for data collection and analysis.

Individual Project:

Processing & Classification of Provenance On Apache Spark

This project implements a pipeline in PySpark to generate provenance types from provenance graphs and aggregate them into feature vectors. Train classification models to classify provenance graphs and extract the most influential provenance types to help explain the behaviour of the classification model.

Courses (Selective):

- Programming practice and Application: Java, OOP, Design Patterns
- Computer Systems: Cache, Pipeline, Assembly Language (MIPS), Computer Architecture.
- Database Systems: Relational Algebra, Buffer Pool, Query Execution, Lock/Latches.
- Data Structure: Heap, Array, Stack, Queue, Sorting Algorithms.
- Internet Systems: HTTP, HTML, TCP/IP, TLS, JavaScript, REST.
- Operating Systems and Concurrency: Locks, Semaphore, Virtual Memory, Paging, Concurrency.
- Machine Learning: Decision Tree, K-means, linear regression, SVM, Evo Algos, Neural Nets.
- Optimization Methods: LP, Shortest Path, Convex Optimization, (Projected) Gradient Descent.
- Cryptography: DES, public-key cryptosystems, RSA, Diffie-Hellman key exchange.

Pennon Education

Shandong, China

A-level

2016/09 – 2019/06

Courses: Maths: A*, Further Maths: A*, Physics: A*, Chemistry: a(as), Accounting: a(as)

All units passed with at least 90%.

EXTRACURRICULAR EXPERIENCE

Microsoft

Suzhou, China

Software Engineer Intern, Bing

2021/06 – 2021/09

- Conducted data processing/feature analysis using Aether pipeline, wrote Scope(SQL-like) and C# code to extract time information from data source in order to calculate document ages then calculate the distribution of document ages in time buckets.
- Simulated the scorecard offline and created modules that calculates CTR and similar metrics of fresh documents.
- Evaluated [MEB model](#) and revealed it was not fresh-fair, the model biased against more recent documents and documents came from fresh tier.
- Trained the model to give even scores for documents from different time and discovered possible reason for the tier gap: feature coverage difference across tiers.

Google

Google Summer of Code, Cloud Native Computing Foundation

2021/06 – 2021/09

- Joined and contributed to KubeVela, a modern application platform that makes it easier and faster to deliver and manage applications across hybrid, multi-cloud environments.
- Contribution mainly revolved around Rollout Controller, which was used in Rollout Plan and Rollout Traits.
- Translated documents as the project was having its first major update from being released.

KCLCSSA

Member of IT department

2020/09 – 2021/06

- Participated in organizations of student events for Chinese students at KCL and connections with students at other universities in London.
- Was responsible for CSSA-card page in CSSA Wechat Mini Program

SKILLS

Languages: English (fluent), Chinese mandarin (native)

Programming Languages: Python, Java, C++, C#, Ruby, Haskell, Scala, Prolog, SQL, HTML, JavaScript

Skills: Software Development, Database Systems, Distributed Systems, Artificial Intelligence