

# CHONGFENG LING

Actively Seeking (Research) Software Development Engineer Roles in London, UK.

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## Education

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### University College London

*Master of Science in Scientific and Data Intensive Computing, Merit*

Sept. 2022 – Sept. 2023

London, UK

### University of Liverpool

*Bachelor of Science in Applied Mathematics, First Class Honours*

June 2022

Liverpool, UK

### Xi'an Jiaotong-Liverpool University

*Bachelor of Science in Applied Mathematics, First Class Honours*

Sept. 2017 – June 2022

Jiangsu, China

## Experience

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### Optimising MRI Pulse Sequence using Reinforcement Learning [\[repo\]](#)

May. 2023 – Aug. 2023

*Master's thesis*

London, UK

- Optimized the gradient-echo sequences for 1-D objects by employing the Deep Deterministic Policy Gradient (DDPG) algorithm, while considering constraints on gradient slew rate.
- Developed an environment utilizing Bloch equations to simulate signal acquisition through the interaction between gradients and objects, followed by reconstruction via Fourier transforms.

### Mathartsys, Inc

*Algorithm Research (NLP) Intern*

Feb. 2021 – Sept. 2021

Shanghai, China

- Generated and maintained scripts to pull and visualize remote data automatically.
- Modified, segmented and augmented voice transcription text based on Regular Expression and Word Embedding.
- Built a multitasking NLP system with BERT and provided support for the company's downstream business including forum public opinion analysis (Sentiment Classification) and sales voice quality (Named Entity Recognition).

### Indoor Localization Based on Wi-Fi Fingerprinting and CNN

June 2018 – Aug. 2018

*Research Assistant, Summer Undergraduate Research Fellowships in XJTU*

Jiangsu, China

- Presented a new location fingerprinting database comprised of Wi-Fi received signal strength (RSS) and geomagnetic field intensity measured with multiple devices at a multi-floor building.
- Mapped RSS data for a reference point to an image-like, two-dimensional array and provided preliminary results of localization based on Convolutional Neural Network.
- Used a modified random way point model to efficiently generate continuous step traces to imitate human walking.

## Projects

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### A Virtual Solar System | *cpp, OpenMP, MPI* [\[repo\]](#)

- Engineered a high-performance implementation of an n-body planetary system, assessing performance and energy loss through step size benchmarking.
- Utilized OpenMP to parallelize the algorithm, with potential deployment on an HPC cluster using MPI.

### Game of Life | *cpp, cmake, Catch2* [\[repo\]](#)

- Designed and implemented a simulation program for Conway's Game of Life, encompassing class construction, unit testing, and the development of a versatile simulation application capable of handling diverse initial conditions.
- Investigated stationary patterns arising from specific initial configurations.

### Kernel Method Projects | *python, numpy, scipy* [\[repo\]](#)

- Implemented Kernel Ridge Regression to predict house prices, contrasting its performance with Linear Regression.
- Designed and optimized a kernel perceptron algorithm for classifying handwritten digits, extending its functionality from binary classification to multiclass classification. Conducted comparative analyses of Gaussian and polynomial kernels using confusion matrices, and utilized cross-validation for hyperparameter selection.

### Python Software Development Project | *python, Sphinx, numpy*

- Developed a Python package for analyzing temporal water level disparities. Employed NumPy and Matplotlib for data processing and visualization, with features including scaling, overlaying, and visualization of water level data.
- Generated documentation for unit and module testing. Implemented CI using the Github Actions platform.
- Collaborated within a team of five members utilizing GitHub issue tracking, pull requests for coordination.

### Awesome-XJTU | *Github Pages* [\[repo\]](#)

- Led the development of an open source knowledge-sharing platform on Github Pages tailored for undergraduates, encompassing course notes, internship consultation, and graduate program information.