Weilue Luo

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Education

University College London   *London, UK*

COMPUTER SCIENCE - MSc COMPUTER VISION (DISTINCTION - EXPECTED AVG. 85+%)   *Sep. 2021 - Present - Sep. 2022*

- Relevant Modules: Machine Learning for Visual Computing, Image Processing, Networked Systems, Machine Vision, Computer Graphics, Perception and Interface, Robot Vision and Navigation, and Virtual Environment.

University of Manchester   *Manchester, UK*

COMPUTER SCIENCE - BSc ARTIFIAL INTELLIGENCE (DISTINCTION - AVG. 83%)   *Sep. 2018 - Sep. 2021*

- Relevant Modules: Mathematics, Operating System, Algorithms and Complexity, Databases, Logic and Modelling, Software Engineering, Imperative Programming, Object-oriented Programming, Machine Learning and Optimization, AI and Games, Computer Vision, Graphics and Image Processing, Distributed Computing, Mobile System, and Cryptography.

Bellerbys College   *Brighton, UK*

FOUNDATION - COMPUTING (1ST IN COHORT)   *Jan. 2018 - Jun. 2018*

- Relevant Modules: Decision & Pure Maths, Databases, Programming & Code, Web Design, and System Analysis.

Skills

Programming	Java ≈ Python > Javascript > GLSL = HTML/CSS.
Java	JUnit, Hamcrest, Lombok, Guava, Spring, Jackson.
Python	Pytorch, Numpy, Matplotlib, Jupyter.
Javascript	NodeJs, ReactJs, ThreeJs, NextJs, SASS/SCSS.
DevOps	Git, CR, AWS, Scrum, Docker, Github Actions.
Spoken	Chinese and Cantonese (native), English (decent), Japanese (beginner).
Other	Proficient with markdown, Unix environment, latex, and various IDE like VSCode and Jetbrains'.

Experience

Amazon - Alexa   *Cambridge, UK*

SOFTWARE ENGINEER INTERNSHIP - JAVA   *Jun. 2021 - Sep. 2021*

- Built and embedded an experiment framework into the existing question-answering pipeline.
- Conducted experiments with 1% customer traffic, analyzed over 10 GBs of customer responses; and presented a proof-of-concept report for novel answering techniques that received positive feedback.
- Developed an efficient workflow for future experiments, reduced experiment deployment time needed from days to hours; coordinated and discussed design decisions with multiple teams.
- Received full-time offer.

Amazon - Item Safety   *Edinburgh, UK*

SOFTWARE ENGINEER INTERNSHIP - JAVA   *Jun. 2020 - Sep. 2020*

- Designed and developed multiple procedures to aggregate concise datasets from 3 million item records daily using tools based on Spark.
- Reduced time-consuming ad-hoc graph analysis from minutes to seconds by developing an effective modern visualization dashboard using Elastic Search and Kibana.
- Enhanced performance evaluation and long-term maintenance by building an API package for automating the creation of visualization components and dashboards.
- Received full-time offer.

Projects

Personal Website   *London, UK*

SOLE DEVELOPER - HTML/CSS, JAVASCRIPT, AND GLSL   *Jun. 2020 - Present*

- Written websites from scratch using various technologies such as reactJs, nextJs, threeJs, sass, postcss, and pugJs.
- https://weilueluo.com includes a 3D landing page, about page, and RSS feeds page.
- Deployed an CORS proxy server for RSS feeds using AWS Lambda.
- Project can be found at https://github.com/Redcxx/personal-website.

NoGhost ML Workflow Enhancement
Sole Developer - Python

London, UK

Jun. 2022 - Present - Sep. 2022

- Assigned as the master project.
- Implement a number of state-of-the-art ML papers such as U-Net Pix2pix, AlacGAN and Sketch Simp to aid artists' development process.
- Built the preprocessing, training and inference pipeline from scratch to manipulate raw data.

Collaborate Live
Lead Developer - HTML/CSS, Javascript, and Python

Manchester, UK

Jan. 2019 - Mar. 2019

- Led a team of 7 students to build a web application for a code-based interview. Designed and implemented all core functionalities including real-time chatting, coding, and drawing with collaborators, supports online code compilation and web-embed terminal.
- Awarded 1ˢᵗ place in most appealing idea and highest technical quality prize out of 37 teams.

Machine Learning with Pytorch
Sole Developer - Python

London, UK

Nov. 2020 - Present

- **Time Series Prediction** Generate Monophonic and Polyphonic piano music via various models & techniques, including LSTM, skip connection & attention. Report can be found at *https://github.com/Redcxx/Third-Year-Project-Report* and music samples can be found at *https://soundcloud.com/kallzvx/sets*.
- **Image Classification** Transfer learning based on a pre-trained resnet, over 90% accuracy with 10 classes of 1000 training samples.
- **Image Denosing** Built a Encoder-Decoder based network, result PSNR improved by 100%(15-30) compared to traditional Gaussian denosing technique.
- **Other** Familiar with linear/polynomial linear/logistic regression/classification; clustering algorithms like KMeans and Meanshift; SVM, kSVM, and wrote a simple network network from scratch.

Local Nameserver
Sole Developer - Python

London, UK

Feb. 2022 - Mar. 2022

- Written a local nameserver that able to resolve any IPv4 address according to RFC 1034 and RFC 1035 specification. The project can be found at *https://github.com/Redcxx/local-nameserver*.

Propositional Logic Utils
Sole Developer - Java

Manchester, UK

Oct. 2019 - Nov. 2019

- A tool for parsing and manipulating propositional logic formulas, supports conversion to normal forms, push negations, tautology and contradiction checks and truth table generation. The project can be found at https://github.com/Redcxx/PropositionalLogicUtils.

Image Downloader
Sole Developer - Python

Manchester, UK

Jun. 2019 - Aug. 2019

- Designed and implemented an API supports automatic login, multithreading downloading, various format parsing and filter images, along with a graphical user interface. The project can be found at *https://github.com/Redcxx/Pikax*.

Photographic Mosaic
Sole Developer - Python

Manchester, UK

Aug. 2019 - Aug. 2019

- Built a library for generating photographic mosaic, capable of processing and matching over 30k images within 3 minutes, supports various RGB-based and LAB-based color difference algorithms. The project can be found at https://github.com/Redcxx/Mosaic-Pics.

MP3 Music Player
Sole Developer - Java

Manchester, UK

Mar. 2019 - Jun. 2019

- A simple MP3 player with GUI, supports functionalities, such as play, pause, restart, and upload custom songs. The project can be found at https://github.com/Redcxx/MP3_Music_Player

Other

- More projects can be found at my github *https://github.com/Redcxx*.