

# Weilue Luo

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## Education

### University College London

London, UK

COMPUTER SCIENCE - MSc COMPUTER GRAPHICS, VISION & IMAGING (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 ARTIFICIAL INTELLIGENCE (DISTINCTION - AVG. 85+%)

Sep. 2019 - 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 (1<sup>ST</sup> IN COHORT)

Jan. 2019 - Jun. 2019

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

## Skills

**Machine** Java ≈ Python > Javascript > GLSL = HTML/CSS.

**ML** Pytorch, Numpy, Matplotlib, Jupyter.

**Web** NodeJs, ReactJs, ThreeJs, NextJs, SASS/SCSS.

**DevOps** Git, CR, AWS, Scrum, Docker, Github Actions.

**Human** Chinese and Cantonese (native), English (decent), Japanese (beginner).

**Other** Proficient with markdown, command-line, latex, and various IDE like VSCode and JetBrains'. Familiar with Unix environment, Blender and Unity.

## Experience

### NoGhost

London, UK

MACHINE LEARNING ENGINEER - PYTHON

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.

### Amazon - Alexa

Cambridge, UK

SOFTWARE DEVELOPER INTERNSHIP - JAVA AND PYTHON

Jun. 2021 - Sep. 2021

- Built and embedded an experiment framework into the existing Question-Answering pipeline.
- Conducted experiments with real customer traffic, written multiple scripts to preprocess, analyze and visualize 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 internal teams.
- Received return offer.

### Amazon - Item Safety

Edinburgh, UK

SOFTWARE DEVELOPER INTERNSHIP - JAVA AND PYTHON

Jun. 2020 - Sep. 2020

- Designed and developed multiple procedures to aggregate concise datasets from 3 billion item records daily using Spark-based tools.
- Reduced time-consuming ad-hoc graph analysis from tens of minutes to seconds by developing an effective modern visualization dashboard using Elastic Search and Kibana.
- Enhanced progress tracking, performance evaluation, long-term maintenance and UI experience by re-designing and implementing an API package for automating the creation of visualization components and dashboards.
- Received return offer.

## Projects

## Personal Websites

SOLE DEVELOPER - HTML/CSS, JAVASCRIPT, AND GLSL

London, UK

Jun. 2020 - Present

- Written websites from scratch using various technologies such as reactJs, nextJs, threeJs, sass, postcss, and pugJs.
- Visits <https://luoweilue.com> (simple) or <https://weilueluo.com> (fancy).

## 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.

## First Person Virtual Reality Game - Bouncing Ray

LEAD DEVELOPER - C#

London, UK

Mar. 2022 - Apr. 2022

- Lead a team of 4 to build a first person Virtual Reality game based on the ubiq framework (<https://github.com/UCL-VR/ubiq>). Project can be found at <https://github.com/HengyiWang/COMP0113-BouncingRay>.

## Collaborate Live

LEAD DEVELOPER - HTML/CSS, JAVASCRIPT, AND PYTHON

Manchester, UK

Jan. 2019 - Mar. 2019

- Directed 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 1<sup>st</sup> place in most appealing idea and highest technical quality prize out of 37 teams.

## 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. Project can be found at <https://github.com/Redcxx/local-nameserver>.

## Poisson Image Editing

SOLE DEVELOPER - PYTHON

London, UK

Dec. 2021 - Jan. 2022

- Implemented the Poisson Image Editing paper. Including techniques such as naive filling; import & mixing gradient; texture flattening, colour isolation & illumination. Project can be found at <https://github.com/Redcxx/poisson-image-editing>.

## 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. See <https://github.com/Redcxx/Pikax>.

## Other

SOLE DEVELOPER

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