

Long (Tony) Lian

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Education

UNIVERSITY OF CALIFORNIA, BERKELEY

Berkeley, CA

Computer Science

Expected Graduation: May 2022

- GPA: 4.0/4.0
- Coursework:
 - Taking: [EECS 126](#) (Probability and Random Processes), [EE 120](#) (Signals and Systems), and [CS 194-26](#) (Computer Vision and Computational Photography)
 - Previous Coursework: [CS 161](#) (Computer Security, A+, ranked as 1 of ~200), [EECS 151/LA/LB](#) (Digital Circuits, ASIC, and FPGA, all A+), [CS 285](#) (Grad. Level Reinforcement Learning, A+), [CS 189](#) (Machine Learning, A+), [CS 188](#) (Artificial Intelligence, A+), [CS 61C](#) (Machine Architecture, A+), [CS 70](#) (Discrete Math and Intro to Probability, A+), [CS 61B](#) (Data Structures and Algorithms, Java, A+), [CS 61A](#) (Structure and Interpretation of Programs, Python, A+), [EE 16A](#) and [EECS 16B](#) (Designing Info. Devices and Systems I/II, A+), [DATA 8](#) (Data Science, A+)
 - Audited: [CS 282A](#) (Grad. Level Deep Learning, audited), [EECS 127](#) (Optimization, audited during full-time internship)
- Taught CS198-008 (Linux System Administration DeCal) as a lecturer (Fall 2019, Fall 2020, Spring 2021)
- Member of International Computer Science Institute, IEEE, Berkeley Chinese Students and Scholars Association, and Open Computing Facility

STANFORD UNIVERSITY

Stanford, CA

Summer Session Student (attended as a high school student)

June 2017 – August 2017

- GPA: 4.11/4.0
- Coursework: CS 193C (Client-end Web Technologies, A+) and CS 106B (Data Structure, C++, A)
- Helped the instructor hold a review session for CS 106B and made contributions to the lecture slides

Publications

Data-centric Semi-supervised Learning

Work In Progress

Xudong Wang*, Long Lian* (Equal contribution), Stella X. Yu

[arxiv: 2110.03006](#)

Unsupervised Visual Attention and Invariance for Reinforcement Learning

[CVPR 2021](#)

Xudong Wang*, Long Lian* (Equal contribution), Stella X. Yu

[arxiv: 2104.02921](#)

Long-tailed Recognition by Routing Diverse Distribution-Aware Experts

[ICLR 2021 Spotlight](#)

Xudong Wang, Long Lian, Zhongqi Miao, Ziwei Liu, Stella X. Yu

[arxiv: 2010.01809](#)

Research Experiences and Internships

Undergrad Researcher, [UC Berkeley International Computer Science Institute](#)

December 2019 – Present

- Doing research with Prof. Stella Yu and Xudong (Frank) Wang on Computer Vision and Deep Neural Networks
- Developed a new **pixel-based reinforcement learning** method which utilizes unlabeled data to effectively train agents robust to visual distractions and **achieved SOTA on several RL benchmarks, accepted by CVPR 2021**
- Developed a multi-expert method that achieved SOTA on **Long-Tailed Distribution Recognition**, where training set and test set have different distributions (**ICLR 2021 Spotlight**)
- Worked on **Open Set Recognition** projects with unsupervised learning to detect instances in novel classes

Research Intern at Deep Learning Platform Team (Distributed ML Group), Baidu Inc.

February 2021 – May 2021

- Designed an efficient **parameter server** on [PaddlePaddle](#), the **most widely-used deep learning framework** in China, and boosted the training efficiency of large-scale Click-Through-Rate prediction models with both sparse and dense layers up to **2x** and greatly accelerates company's internal ML deployment workflow
- Filed a patent on **large-scale training and acceleration of neural network models** with heterogeneous hardware, specifically for models with I/O-intensive and computation-intensive components

- Implemented **reinforcement learning algorithm [Rainbow](#)** with Baidu's RL framework [PARL](#) as a side project
Undergrad Research Apprentice, UC Berkeley September 2018 – May 2021
- Contributed operators to data query library [Queryverse](#) for **data scientists** for **JuliaLang** community first as a part of [Undergrad Research Apprentice Program](#) under the supervision of Prof. David Anthoff
- Added a plot gallery functionality, which was demonstrated in **JuliaCon 2021**, to [Julia's Official VS Code Extension](#) as a developer in JuliaLang Community

Full Stack Engineering Intern (Profile Products team), Yelp Inc. May 2019 – August 2019

- Developed Verified License for Professionals, which extends existing license verification service to professionals such as doctors and lawyers with **React, Node.js, NoSQL, and Python (Pyramid)**
- Enhanced purchase flow which improves **the license verification rate** and brings Yelp about **\$2M** per year
- Improved corporate short URL service so that it **gives smart suggestions** when a nonexistent short URL is typed
- Received a return offer as Machine Learning Intern, but Yelp's intern program was cancelled due to COVID-19

Full Stack Engineering Intern, Panopath Tech & Education November 2017 – July 2018

- Designed a hybrid mobile app with **Ionic, TypeScript, and Laravel** for an organization with 200, 000+ users
- Built School Matcher, a web app that suggests schools for prospective students, with **Express.js, and Sequelize**

Patents

A Neural Network Training Method, Apparatus, Electronic Device, Medium, and Program Product

Filed in May 2021 as a part of internship at Baidu

- Patent Number: [CN202110548446](#)

A Copy/Scanning Device with Automatic Image Adjustments

Granted in December 2017

- Patent Number: [CN201720565893](#)

A System Used for Monitoring Indoor Air Quality

Granted in June 2016

- Patent Number: [CN201620022057](#)

Standardized Tests

GRE 339/340 (Writing: 5/6)

TOEFL 111/120

On-campus Student Positions

Staff, Open Computing Facility at UC Berkeley (**Linux System Admin**) September 2018 – Present

- Migrated the lounge, a web-based IRC client, to **Kubernetes**
- Built an environment for machine learning on **Singularity** with **GPU support** on High Performance Computers
- Enhanced Lab Map, a lab usage map running on Kubernetes indicating available desktops in Open Computing Facility Computer Lab

Side Projects

ML-Related Projects

- [Rainbow](#): An implementation of **Rainbow** algorithm with [PARL](#) reinforcement learning framework
- [AnimeGAN.js](#): An implementation of AnimeGAN with [tf.js](#), which **converts photos to anime style** online
- Lotus: An interactive, graphical-module-based platform for fast neural network prototyping without coding

Hardware-Related Projects

- A **RISC-V RV32I CPU** implementation with a 4-stage instruction pipeline on a Xilinx FPGA, with BIOS, UART, PWM, and GPIO support

Full-stack Projects

- Designed Phood, a **web app** for tourists that extracts food information from camera and gives health suggestions with Azure DevOps' **Continuous Integration** service to automatically deploy to **Kubernetes**; Docker invited our team to present at Official **DockerCon 19** for the use of Docker and Kubernetes
- Founded Code Recipe, a website with a **Vue.js** front-end and **Laravel** back-end to host self-written interactive textbooks