

# Zhewen Yang (Lucas)

[zyang122@jh.edu](mailto:zyang122@jh.edu) | +1-4242951857 | <https://www.linkedin.com/in/zhewen-yang/> | <https://yangzhewen.github.io/>

## Education

### Johns Hopkins University

Baltimore, MD

Master's student in Computer Science

Jan 2023 – Present (enrolled in Spring 23 semester)

(COVID-19 pandemic finally ended)

Planned to graduate in 2024

- Class Taking: Software Define Networks, Blockchains and Cryptocurrencies, Computer Vision, Deep Learning
- Lab Intern: Research projects for distributed systems (HBase,ZK) under the supervision of Prof. Ryan Huang (UMich)
- Lab Intern: Participate in the project of developing new network architecture in Prof. Scott Shenker's lab (UCB)

### Nanjing University

Nanjing, CN

Research Assistant (Mainly studying computer network and systems) (Studied in China due to COVID-19)

Jan 2021 – Nov.2022

- Publication: "Norma: Towards Practical Network Load Testing." Accepted by USENIX NSDI'23 (3<sup>rd</sup> student author and speaker)
- Project: Bandwidth Allocation Among Tenants for QoS (Quality of Service) System Development and Research in Datacenter Networks (Patent application in progress)

### University of California, Berkeley

Berkeley, CA

Berkeley International Study Program

Aug 2019 – Dec 2019

- Courses: Introduction to Database, Machine Structures, Numerical Analysis

### Xi'an Jiaotong University

Xi'an, CN

Bachelor of Engineer in Computer Science and Technology (Honors Science Program)

Sep 2017 – Jun 2021

- GPA: 3.47/4.00
- Courses: Operating Systems, Data Structures, Analysis of Algorithms, Artificial Intelligence, Machine Learning, Computer Networking, Software Defined Networking, Computer Vision

## Academic Experiences

### Bandwidth Allocation Among Tenants with Quality-of-Service System Development Project

Nanjing, CN

Lead Developer

Nov 2020 – Jun 2022

- Created 3000+ line projects with NS-3 network simulator and programmable switches, using C++ and P4 languages
- Designed and developed a network bandwidth allocation system based on the end hosts to minimize in-network calculation and load scheduling time in-between networks and to achieve multiple application strategies
- Achieved bandwidth utilization rate of 80% with high stability compared to 50% in previous systems
- Completed most programming tasks that contributed to research and a patent application in progress as 1<sup>st</sup> author

### Norma: A High-Performance Network Tester Based on Programmable Switches

Nanjing, CN

Developer (Project collaborated with Alibaba, China)

Nov 2021 – Jan 2022

- Developed customizable and light-weight in-network performance testing tool by utilizing P4 language for switch hardware programming and C++ for control plan software programming
- Evaluated the system architecture, designed and implemented controlled experiments for the research group
- Ensured testing tool performance under high-speed and extreme testing environments, with high testing accuracy of around 95.5% compared to the previous result of approximately 50%, paper proceedings of on NSDI 2023

### Summary and Analysis of Public Opinion Trends and Patterns based on Twitter Crawlers Project

Xi'an, CN

Research Assistant

Feb 2021 – May 2021

- Designed website crawlers using PySpider and Selenium and successfully collected datasets of over 400k samples about COVID-19 information on Twitter from relevant countries and regions
- Conducted statistical analysis, cleaned, and transformed data using TF-IDF, and tried to analyze data using PyTorch with Text Convolutional Neural Networks (Text CNN) to summarize the pattern and trend of public opinion

### Statistical Machine Learning Regression Analysis on Weather Data Project

Alberta, CA

Summer School Student

Jul 2018 – Aug 2018

- Analyzed and cleaned the weather dataset by smoothing out data noise, filtering relevant data, handling missing data and outliers; and performing one-hot-encoding and z-score standardization on the data
- Built models to predict future one-week weather using Ridge and Lasso regression, with an over 70% accuracy, which significantly improved compared to the baseline model; visualized the data and made a presentation about the findings

## Professional Experiences

### Baidu, Inc.

Beijing, CN

Software Developer Intern

Jan 2020 – Feb 2020

- Designed and developed end-to-end solutions, including site acceleration, continuous delivery, capacity management, elastic computing, failure analysis, traffic distribution, and performance tuning
- Designed programs of 500+ lines using C++ and Java to conduct maintenance of the Baidu Voice Assistant system and network during the Chinese New Year peak network usage period, and reduced error rate by 10%-20%
- Pitched the program to the company and successfully incorporated it into DuerOs, a popular smart home appliance

## Research interests & Skills

**Research interests:** Networking and Networking system, Distributed system, Storage system

**Technical Skills:** **Languages:** [C++, Python, C] (familiar), [SQL, Bash, R, P4] (have experience), [JAVA, Go, Swift] (a little)

**Frameworks:** Scikit, PyTorch, TensorFlow, Keras, (a little Django, Flask, and NodeJS)

**Tools:** GIT, MySQL, NS3 Network Simulator, (a little Kubernetes and Docker)