Christopher Yoon

(646)-357-6843 · cjy2129@columbia.edu · github.com/cyoon1729 · US Citizen

Education

Columbia University, B.A. Computer Science and Mathematics (GPA: 3.87/4.00) Sep 2020 – May 2024 | New York, NY

Coursework (Fall 2023): † *indicates graduate-level coursework*

Adv. Operating Systems (graduate research seminar)† Distributed Systems† Compilers† Representation Theory

Past Coursework (Abbreviated):

Operating Systems† Parallel Functional Programming† Databases† Artificial Intelligence†

Abstract Algebra I&II Real Analysis I Number Theory Supervised Reading in Topology

Skills

Interests: Distributed Systems, Machine Learning Systems, Operating Systems, Backend Development

Languages: Python, Haskell, C, SQL, familiar with Typescript

Technologies: PyTorch, Tensorflow, Postgres, Flask, React

Experience

Incoming Software Engineer Intern, **Riot Games** Jun 2022 – Sep 2022 | *(Remote)* LA, CA

- Building tools to monitor and respond to crashes in live game services (Stack: Python, Flask, Typescript, React)

Undergrad Researcher, **Columbia University - Computer Science Dept.** Aug 2021 – Present | New York, NY

- Building scalable tools for tracking dataset behavior during large-scale ML training, advised by Prof. Junfeng Yang
- Tracing and visualizing how each datum in a large dataset affects model performance with minimal overhead

Teaching Assistant, **Columbia University - Computer Science Dept.** Jan 2022 – Present | New York, NY

- Selected as TA for: Artificial Intelligence, Fundamentals of Computer Systems
- Ran weekly office hours to help peers learn assembly code, applied probability, reinforcement/supervised learning
- Organized recitations on writing clean code and helped maintain autograder infrastructure

Software Engineer, **Faikerz** May 2021 – Nov 2021 | *(Remote)* Seoul, Korea

- Rewrote core image processing engine to incorporate feature embeddings, improving retrieval runtime by 60%
- With the improvements above, built clustering engine for brand-specific counterfeit listings on E-commerce sites

Machine Learning Engineering Intern, **Medipixel** May 2020 – Aug 2020 | Seoul, Korea

- Built distributed training framework for company's open-source ML library, accelerating ML in compute clusters
- Designed and implemented simulator and reinforcement learning solution for 3D medical image alignment
- Ran company-wide seminar on designing and implementing distributed/large-scale ML training infrastructures

Selected Projects

haskpad.io [Haskell, TypeScript+React]: Online Collaborative Code Editor **[Github]**

- (Work in Progress) Building a collaborative online code editor based on the operational transform algorithm
- Built a collaborative editing engine and server with Haskell; Currently working on a Typescript/React frontend.

RLcycle [Python, PyTorch, ZeroMQ]: Modular (Distributed) RL Agents Framework **[Github ★: 200+]**

- Implemented 12 key RL algorithms and rigorously tested on Atari games and robotics tasks
- Incorporated parallel and distributed (Ape-X) learning architecture, using Ray-distributed and ZeroMQ

Linux Kernel Hacking [C, Linux]: Projects from Operating Systems Coursework

- Built a **concurrent kernel KV store**, **process scheduler**, **file system** inside the Linux kernel with 2 teammates.
- Extensively built on, modified, and studied the Linux kernel (v5.10) source code.
- Built and stress-tested highly concurrent web server in C, iterating on different concurrency and IPC approaches: (threadpools, NGINX-like pre-forked process pool, shared memory mapping, socket multiplexing, etc)