Joanna Y

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Education

Carnegie Mellon University   *Pittsburgh, PA*

B.S. in Information Systems, Additional Major in Computer Science | **3.97/4.0**   *Aug 2019 - May 2023*

- Distributed Systems, Computer Security, Database Design, Computer Systems, Game Programming, Software Engineering for Startups, Quantum Computation, Data Structures and Algorithms, Algorithm Design and Analysis, Programming Language Pragmatics, Functional Programming

Experience

Hudson River Trading   *New York, NY*

Algo Software Engineer   *July 2023 - Present*

- Developing research platforms.

Amplitude   *San Francisco, CA*

Software Engineer II Intern   *May 2022 - Aug 2022*

- Designed and implemented a feature for high-dimensional data analytics that's crucial to landing new e-commerce customers.
- Integrated Mypy into the CI/CD pipeline, enforcing static typing in Python code throughout the company.

Software Engineer Intern   *May 2021 - Aug 2021*

- Implemented an in-house MapReduce based analytics feature used weekly by hundreds of customers.
- Discovered and fixed a production bug in cohort analysis impacting 10% of users, maintaining the feature's high performance on large datasets.
- Developed a new chart style to calculate and visualize user-defined customer state transitions.

Carnegie Mellon University   *Pittsburgh, PA*

Teaching Assistant (15-210: Parallel and Sequential Data Structures and Algorithms)   *Aug 2021 - May 2023*

- Led recitations and office hours supporting 1000+ students over four semesters in algorithm design and functional programming in Standard ML.

Projects

SPARC Transpiler   *Website*

Co-Developer   *Dec 2022*

- Wrote a source-to-source compiler from SPARC (a pseudocode language) to Standard ML in OCaml.

RPG Framework   *GitHub*

Developer   *Dec 2021 - Feb 2022*

- Wrote a 2D role-playing game framework from scratch in C++ using SDL2.
- Supports many essential RPG features, including skill/combat systems, map and character interaction, etc.

Distributed Systems Projects

Co-Developer   *Aug 2021 - Dec 2021*

- Developed a distributed bitcoin mining system in Go, including a custom client-server communication protocol over UDP, and a three-tier web server implementing a basic social media platform.

Predicting Player Skill from Statistics in Overwatch   *GitHub*

Lead Developer   *Apr 2021 - May 2021*

- Led a Python machine learning project that provides predictive analytics based on automated data scraping.

Seaborn Tutorial   *GitHub*

Author   *Mar 2021*

- Wrote a tutorial on data visualization in Python with Seaborn.

Skills

Programming   Python, C++, Java, Go, OCaml, Ruby on Rails, JavaScript, SQL, R, Standard ML

Domains   Game Design, Data Engineering, Writing, Teaching