






Hong Sng

 sng hong |  sng-hong |  sng hong.github.io |  sng.h@outlook.com |  4126368764

EDUCATION

Carnegie Mellon University

Aug 2021 – Dec 2024

Bachelor of Science in Computer Science (Honors), Additional Major in Logic (GPA: 3.8/4.0)

- Systems Concentration: Operating Systems, Distributed Systems, Databases, Cloud Computing, Security
- AI Concentration: Deep Learning, Natural Language Processing, Autonomous Agents, Machine Learning

EXPERIENCE

Core Data Engineering Intern

May 2024 – Aug 2024

Citadel

- Manage data pipeline in Python for firmwide shift to semantic graph model, ensuring 99.9% reliability, telemetry

Backend Systems Infrastructure Engineering Intern

May 2023 – Aug 2023

LinkedIn

- Developed Azure cloud graph query proxy in Golang, Java for 30ms latency at 2K QPS for Microsoft Fabric
- Designed gRPC microservice with Redis caching, Kubernetes autoscaling, CosmosDB fault tolerance and recovery
- Raised throughput by 10x for federated and asynchronous graph queries in Apache Spark, such as PageRank

Web Developer Intern

May 2021 – Aug 2021

Novocall

- Integrated messaging API for CRM tool on Ruby on Rails, React, PostgreSQL app, increasing profits by 10%
- Built frontend UI with React, backend APIs with jQuery, Axios, PostgreSQL and end-to-end tested with Rspec

Full-Stack Engineering Intern

Nov 2020 – Apr 2021

Novena

- Created and scaled e-commerce engine with Next.js, Tailwind frontend, Serverless backend spurring sales by 15%
- Drove responsive web design, mobile optimization, server-side rendering overhauls, speeding up page loads by 40%

SERVICE

Teaching Assistant

Jan 2022 – Present

Carnegie Mellon University School of Computer Science

- Algorithm Design and Analysis: advanced algorithm modelling, paradigms, probabilistic analysis for 200 students
- Distributed Systems: large-scale system design, networking, distributed compute in C, Java, Go for 600 students
- Fundamentals of CS (Lead): data structures, OOP, graphics in Python, led hackathons with HRT for 1K students

RESEARCH

Research Assistant

Jan 2024 – Present

Carnegie Mellon University Computational Historical Linguistics L-Lab

- Performed probabilistic synthetic language generation of 10K-word datasets for groundbreaking ACL Paper
- Fine-tuned GPT-4 LLM, feature engineering for language ancestry, sound law inference in Python at 81% accuracy

PROJECTS

Multimodal Webtoon Generator | Python, Django, GPT-4, DALL-E, SQLite

Dec 2023 – Present

- Created architecture for real-time text, image, music generation in <1s in infinite-scroll webtoon powered by LLMs

Autonomous Hydroponics Greenhouse System | Python, PyTorch, ROS2, Raspberry Pi

Aug 2023 – Dec 2023

- Deployed hardware sensors, actuators, computer vision and ML model to monitor and grow 50 radishes, turnips

SKILLS

Languages: Python, Go, Java, C, C++, C#, Rust, Scala, Ruby, JavaScript, HTML, CSS, Bash, SML, SQL

Tools: Azure, AWS, Google Cloud, Kubernetes, Docker, Linux, Apache Spark, Kafka, Samza, Hadoop, MongoDB

Libraries: PyTorch, TensorFlow, GPT, Hugging Face, OpenCV, NLTK, Django, Rails, React, Flask, NumPy, Pandas