Hong Sng

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EDUCATION

Carnegie Mellon University — Aug 2021 – Dec 2024

Bachelor of Science (Honors) in Computer Science, Logic (GPA: 3.7/4.0)
- Systems & AI Concentrations: Advanced OS & Distributed Systems, DB, Cloud, ML, NLP, Deep Learning, Agents

EXPERIENCE

Distributed Systems Software Engineer — Feb 2025 – Present

Databricks
- Multi-Cloud Compute on the Network Platform team - still compiling...

Data Reliability Engineering Intern — May 2024 – Aug 2024

Citadel
- Designed observability tools for firm-wide ingestion of TBs of data 24/7 in 100 pipelines in Python, Java
- Deployed end-to-end telemetry framework with OpenTelemetry, DataDog, Splunk for system health monitoring
- Built analysis, recovery tools for ETL platform in production environment, reducing downtime by 80%

Back End Systems Infrastructure Engineering Intern — May 2023 – Aug 2023

LinkedIn
- Developed graph query proxy in Go at 30ms latency, 2K qps, 99.999% reliability for Microsoft Fabric
- Drove autoscaling, availability with Docker, Kubernetes, Redis caching and CosmosDB fault tolerance, recovery
- Optimized performance by 10x for federated and asynchronous gRPC queries for distributed compute in Spark

Full Stack Web Developer Intern — May 2021 – Aug 2021

Novocall
- Drove market release of CRM tool on JavaScript, Postgres, Ruby on Rails to Shopify
- Designed frontend UI with React, backend APIs with jQuery, Axios with end-to-end testing with Rspec

Front End Engineering Intern — Nov 2020 – Apr 2021

Novena
- Built responsive mobile & web UI, scaled web engine with JavaScript, React, MySQL improving loads by 60%

ACADEMIA

Computer Science Teaching Assistant — Jan 2022 – Present

Carnegie Mellon University School of Computer Science
- Taught 2000 students for 3 classes with 12 professors: Distributed Systems, Algorithm Analysis, Intro CS
- Led recitations in Large-Scale System Design, Algorithm Modeling, Data Structures, OOP in C, Java, Go, Python

Natural Language Processing Research Assistant — Jan 2024 – Present

Carnegie Mellon University Computational Historical Linguistics L-Lab
- Co-authored paper on Genetic Search and Monte Carlo Tree Search for modeling historical language changes
- Co-authored paper on LLM-based sound law inference for low-resource languages (arXiv:2406.12725)

PROJECTS

Machine-Learning-based K8S Autoscaler | *GCP, Kubernetes, K6, Prometheus, Grafana* — Oct 2024 – Present
- Linear Regression for simple and performant predictive autoscaling on large datasets, beats default HPA by 20%

Multimodal AI Webtoon Generator | *Python, React, JavaScript, MySQL, ChatGPT* — Dec 2023 – Present
- Created architecture for text, image, music generation in <1s in infinite-scroll webtoon powered by ChatGPT

Autonomous AI Hydroponics Greenhouse | *Python, PyTorch, ROS2, Raspberry Pi* — Aug 2023 – Dec 2023
- Deployed on-device ML algorithms, hardware, autonomous agent software to monitor, grow 50 radishes biweekly

SKILLS

Languages: Python, Go, Java, C, C++, Scala, Rust, Ruby, JavaScript, HTML, CSS, Bash, SML, SQL, C♯ | CN, JP, KR
Tools: Azure, AWS, GCP, Kubernetes, Docker, Terraform, MySQL, PostgreSQL, Apache Kafka, Spark, Hadoop, NiFi
Libraries: React, ChatGPT, PyTorch, TensorFlow, OpenCV, Django, Flask, Rails, NumPy, Pandas, OpenTelemetry