

Chih-Hsing (Hathaway) Chen

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EDUCATION

Virginia Tech

Master of Engineering in Computer Science and Applications
Concentrate in Software Engineering

Falls Church, VA

May 2025

WORK EXPERIENCE

Specialist Software Engineering Leadership Program

Atlanta, GA

Acuity

Jul. 2025 - Present

- Engineered a **C#/.NET** gateway simulator by fixing **10+** protocol handlers, strengthening **TCP/IP** message routing and **ACK** semantics, and enabling large-scale performance testing with **75+** simulated gateways
- Incorporated **12** QA-authored **BDD** (Behave) scenarios into the automated validation workflow, increasing end-to-end testability and reducing reliance on limited physical hardware
- Reduced memory growth by profiling CPU/memory usage, pinpointing hot paths and high-retained object types, and cutting LogEntry peak memory by **48%**, improving stability and lowering OOM risk
- Built a **Python + SQL** data generation pipeline that produced **55K+** test fixtures, improving regression coverage

Big Data Platform Engineer Intern

Reston, VA

Eviden

Aug. 2024 - Jan. 2025

- Collaborated with senior engineers with optimizing real-time data streaming pipelines with **Apache Kafka** and **Flink**, efficiently handling millions of events per second and ensuring reliable delivery across distributed systems
- Integrated **Grafana** with SIEM tools to visualize security events, enabling real-time monitoring and alerting to improve incident response while collaborating with a global team

Graduate Research Assistant

Falls Church, VA

Virginia Tech

May 2024 - Aug. 2024

- Built a data pipeline using **regex-based** filtering on YouTube API data and stored the processed results in **PostgreSQL** to enable efficient querying
- Applied **Latent Dirichlet Allocation** for topic modeling, extracting scam-related topics covering the top **15%** of overall distribution

Research Assistant

Taipei, Taiwan

Academia Sinica

Jun. 2021 - May 2023

Project: Automatic Adhesive Capsulitis Assessment Systems

Advisor: Yu Tsao

Lead Author for [2023 11th International IEEE/EMBS Conference on Neural Engineering \(NER\)](#)

- Tackled class imbalance using **SMOTE** and optimized ensemble models (**Random Forest**, **XGBoost**), achieving a **32%** performance boost in internal evaluations
- Applied **transfer learning** on pretrained models to enhance classification performance from **43% to 75%** in identifying key movement patterns

RELEVANT PROJECTS

AI-Powered Academic Assistant (*LangChain, OpenAI API, Chroma DB, Python, React*) [Link](#)

Jan. 2025 – May 2025

- Engineered an AI assistant leveraging **Retrieval-Augmented Generation** pipeline using **LangChain** and OpenAI API to deliver contextual academic support and automate student services
- Integrated **Chroma vector database** with dense embeddings for high-performance semantic retrieval

Bookstore Web Development (*HTML, CSS, React, TypeScript, Java Servlets, REST APIs*) [Link](#)

Aug. 2023 - Dec. 2023

- Developed a full-stack bookstore application using **Java** and **React**, integrating **SQL**, **Servlets**, and **RESTful APIs** for efficient inventory management
- Designed and deployed a scalable short URL system on **AWS**, leveraging **EC2**, **RDS**, **ELB**, and CI/CD workflows for high availability

SKILLS

Frontend JavaScript, TypeScript, HTML5 | React, Vue

Backend Python, Java, C++, C#, .NET, Kotlin, Golang (Go), Node.js, Scala, SQL | Django, Flask | MySQL, PostgreSQL

AWS Certificate: [AWS CLF-C02](#) | API Gateway, CDK, DynamoDB, Lambda, RDS, Route53, S3, VPC

Others Docker, Kubernetes, Terraform | CI/CD, Jenkins | Airflow, Elasticsearch, Grafana, Kafka, Apache NiFi, JUnit