Claire Chen

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Education

University of Illinois, Urbana Champaign **Expected Graduation:** May 2026

Mathematics and Computer Science, B.S. **Grade:** 4.0/4.0

Relevant Coursework: Data Structures · Computer Architecture · Systems Programming · Distributed Systems · Graph Theory · Abstract Linear Algebra · Statistics and Probability · Discrete & Fundamental Math · Complex Analysis

Experience

CME Group *Software Engineer* May 2024 - Present

- Current intern on markets and trading platform.

AMD — Disruption Lab *Software Engineer* Jan 2024 - May 2024

- Optimized AMD Mic performance by efficiently categorizing and removing unwanted noise leveraging DL algorithms.
- Constructed state-of-the-art audio separation model Sepformer in PyTorch on AWS Sagemaker to handle sources of different noise scales with reverberation and background noise.
- Ported PyTorch models into ONNX to run on AMD hardware.

ACM @ UIUC *Software Engineer* Aug 2023 - May 2024

- Developed a resume book for companies to filter and network with students in Association for Computing Machinery.
- Handled login flow and backend, and linked and stored user information in AWS database with Boto3.
- Designed profile cards for each registered student displaying degree, skills, graduation year, etc.

A*Star *Software Engineer, Machine Learning Engineer* Aug 2023 - Jan 2024

- Allowed operators to use natural language to query unstructured information in a knowledge base of financial information for an AI Fintech startup.
- Enabled efficient context formation in conversations and the ability to recall past conversations with no context loss by constructing novel knowledge graphs; cross tested loss and accuracy by implementing LLMs for the same task.
- Implemented accurate detection of pages with useful tabular data and PDF parsing by leveraging GPT-4 and Azure.

UC Santa Barbara Vision Research Lab *Computer Vision Research Engineer* Jun 2023 - Aug 2023

- Conducted biomedical image analysis of distinguishing viral pneumonia COVID-19 from other forms of viral pneumonia through deep learning multi-class image classification.
- Innovated novel two layer stacked ensemble method incorporating transfer learning, hyperparameter tuning, image preprocessing, and ensemble learning that achieved 21.37% improved accuracy to baseline ResNet50.

Projects

Exchange Simulator *C++ · CMake*

- Built a stock exchange simulator in C++ following NASDAQ ITCH protocol optimizing low latency and high throughput.
- Ensured thread safety and minimized contention by using lock-free SPMC queue and atomic operations.
- Optimized matching engine to constant time order operations with no overhead and near constant best prices order search with good CPU cache locality by using preallocated data structures.

Gradient Boosting on Identifying Age-Related Conditions *Python · TensorFlow*

- Analyzed a dataset of over fifty anonymized health characteristics linked to three age-related conditions to predict patients' conditions for the InVitro Cell Research Company.
- Leveraged gradient boosting (CatBoost, LightBoost, XGBM) to build ML model and handled dataset imbalances.

Technical Skills

Languages and Frameworks: C++ · Java · Python · MIPS Assembly · Rust · SQL · Typescript · Verilog · Spring Boot · React

Development Tools and Platforms: Git · CMake · Kubernetes · Docker · Kafka · RabbitMQ · Maven · JUnit · Mockito

Cloud Tools: GCP · AWS · Supabase · Firebase · PyTorch · ONNX · Azure · Sagemaker