# 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:** C++ · Python · Java · MIPS Assembly · TypeScript · Rust
**Web Frameworks and Developer Tools:** Linux · Git · Kubernetes · Docker · React · LaTeX · Typst · GitHub Actions
**Other Technologies:** Supabase · AWS · Firebase · NumPy · PyTorch · TensorFlow · NextJS · Tailwind