

Claire Chen

+1 760-607-8798
clairechen@cmu.edu
github.com/clairec03
linkedin.com/in/clairecch

EDUCATION

Carnegie Mellon University

Bachelor of Science, *Computer Science*

Aug 2021 - May 2025

- Dual Concentrations in *Machine Learning, Security & Privacy*
- **Coursework:** Deep Reinforcement Learning, Generative AI, ML with Large Datasets, Security, Privacy, Algorithms, Parallel Computer Architecture, Distributed Systems, Deep Learning, Functional / Imperative Programming
- **Activities:** Plaid Parliament of Pwning, Data Science Club, Women in Cybersecurity, Business Consulting
- **Honors:** HackCMU 1st Place Winner, Red Robot Hackathon 1st Place Winner, Hack112 @ CMU 1st Place Winner, Splunk Grand Hackathon Finalist, National Merit Commended Scholar, NCWIT Award for Computing

EXPERIENCE

Microsoft

Redmond, WA

Software Engineer Intern - HPC/AI Training Platform (Azure Core, Specialized)

May 2024 - Aug 2024

- Predictive ML using Spark in Databricks for failure prediction of nodes in NVIDIA H100/A100 HPC clusters
- Fully trained and tested 31 LSTM models with, on average, near-perfect accuracy, 94% precision, 95% recall
- Performed EDA & feature selection. Built efficient, scalable health visualization dashboards for large datasets.
- Engineered ETL data pipelines. Automated data processing, transformation, and scheduled data ingestion

Splunk

Remote, US

Software Engineer Intern - Performance, Scalability, and Reliability

Jan 2024 - Apr 2024

- Triaged high-priority Core Search performance KPI's, optimized away 95% of test suite for cost reduction
- Improved overall test duration by 43%. Migrated an internal platform to enable better developer productivity

Carnegie Mellon University

Pittsburgh, PA

Head Teaching Assistant and Teaching Assistant for Computer Security (15-330/18-330)

Aug 2023 - Current

- Manage 7 TA's, course logistics for 100+ students. Lead boot camps, grading, assignment creation & revision.
- Provide debugging and conceptual help on Software Security, Cryptography, System & Network Security.
- **Skills:** Binary (overflow, ROP, GOT), web hacking (XSS, CSRF, injection, session hijacking), cryptography

Stryker

Remote, US

Software Engineer Intern - AI Systems

May 2023 - Aug 2023

- **MLOps:** Implemented features and tests for internal DevOps CLI tool for AI research with Azure integration
- **Ambient intelligence:** Created PoC, MLOps pipeline to monitor sanitization compliance in operating rooms
- **Privacy:** Augmented human image datasets with anonymization, pose detection, segmentation, re-coloring
- **Model evaluation:** Fine-tuned ML models. Validated algorithm correctness of a predictive maintenance app

Carnegie Mellon University (CyLab Security and Privacy Institute)

Pittsburgh, PA

Researcher and Project Lead

Feb 2022 - Sep 2023

- Surveyed 1K+ consumers to evaluate effects of IoT security/privacy labels on comprehension and behavior
- First authored and presented publication at ACM CHI. Presented poster at Symposium on Usable Privacy.
- Contributed to an IoT security labeling report at the White House and presentation to FCC working groups.
- Created websites with session tracking and content personalization. Automated analysis in Python & R.

Carnegie Mellon University (Robotics Institute)

Pittsburgh, PA

Robotics Researcher

May 2022 - Jan 2023

- Built ML-based 3D pedestrian simulation and visualization packages with C++, Python, ROS, RViz for a guide robot to assist disabled people navigate complex traffic, using personal space modeling algorithms.

SKILLS

Languages - C, C++, Python, x86 / x64, SML, Go, Rust, Java, Arduino, Dafny, R, Mandarin, English, Spanish

Libraries/Frameworks - Spark, PyTorch, NumPy, Pandas, OpenCV, CUDA, OpenMP, MPI, NLTK, PyCrypto

Development - Azure, AWS, Web Dev (Svelte, HTML, CSS, JavaScript), Databricks, Colab, GitLab CI/CD

Other - Unix/Linux, Git, SQL, KQL, GDB, Valgrind, perf, Bash, LaTeX, Vim, Docker, Agile, Power BI, SLURM

PROJECTS

- **NLP:** Implemented and trained various language models (e.g. transformers with GQA, RoPE) 2022 - Current
- **Big Data:** Dimensionality reduction (PCA, Random Projections), text-mining with TF-IDF & LSH Aug-Oct 2024
- **CV:** Implemented vision models for classification (e.g. CNN-autoencoder), generation (e.g. diffusion) Jan-2023
- Parallel implementations of VLSI wire-routing algorithms via OpenMP and MPI Mar 2024
- Efficient, parallel, and modular video renderer in CUDA C++ on NVIDIA RTX 2080 GPU Feb 2024
- Programmed a dynamic memory allocator, shell, web proxy, and cache in C with Unix library Jul-Aug 2022