Jimmy Chen

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jimmychen02.github.io/JimmyChenPortfolio/

Education

Cornell University, **College of Engineering** Ithaca, NY
B.S. in Computer Science *Expected May 2027*
GPA: 3.51/4.0
Relevant Coursework: OOP & Data Structures, Functional Programming, Machine Learning, Discrete Math, Probability & Stats, Intro to Python, iOS Development, Linear Algebra, Multivariable Calculus

Technical Skills

Programming Languages: Java, Python, OCaml, Swift, JavaScript, SQL
Backend & Systems: REST API Dev., Multithreading, Concurrency, TCP Networking, Socket Programming, SSL/TLS, CI/CD
Cloud & DevOps: AWS (EC2, S3, RDS, IAM), PostgreSQL, MySQL, Supabase, GitHub Actions
Tools & Frameworks: React, FastAPI, Docker, Git, VS Code, Unix/Linux, Firebase, SwiftUI, NumPy, PyTorch

Experience

Web Developer Intern *Jun 2023 – Nov 2023*
New York Tutoring Center New York City, NY

- Launched production tutoring site for 100+ students within 6 months using scalable web architecture and Agile sprints
- Configured Drupal CMS with Docker for local development and testing environments; streamlined deployment
- Increased site traffic by 40% and engagement by 60% through SEO improvements including sitemap, metadata, and Google Search Console
- Managed user data with MySQL and implemented Git workflows for version control and team-based development

Projects

Neural Networks for MNIST | CS 3780 | Python, Deep Learning, PyTorch, Neural Networks *Oct 2025*

- Designed and trained a multilayer perceptron and convolutional neural network in PyTorch for digit recognition
- Optimized model architecture and hyperparameters to reach 95%+ test accuracy on the MNIST dataset
- Improved model training speed by 40% through batch normalization, learning rate scheduling, and momentum tuning

Dungeons & Dragons Simulator | CS 2110 | Java *Sep 2025*

- Implemented a modular, turn-based simulation engine in Java using inheritance, abstract classes, and dynamic method overriding to manage multiple interacting entities and game state updates
- Designed reusable class hierarchies and applied object-oriented design principles to model system behavior, optimize memory management, and ensure maintainable and extensible code architecture

Kernel and Linear SVMs | CS 3780 | Python, PyTorch, NumPy, scikit-learn *Sep 2025*

- Implemented linear and kernel SVMs from scratch in Python using gradient descent and hinge loss optimization
- Tuned hyperparameters (C, kernel width) to achieve near 0% training error and over 99% accuracy on test data
- Built and compared models across linear, polynomial, and RBF kernels to analyze overfitting and generalization

Multithreaded Chat Server | Java, TCP Sockets, Multithreading, Concurrency *Jun 2025*

- Developed a scalable Java chat server with thread-per-client architecture, supporting 50+ users and real-time message broadcasting/private messaging (/whisper, /list, /nick, /quit)
- Built async I/O for stable, scalable message delivery and lower latency
- Leveraged TCP socket programming and ConcurrentHashMap for thread-safe operations, advanced command parsing, and seamless extensibility to distributed architectures

Cloud Password Manager | Python, PostgreSQL, AWS (EC2, RDS), Cryptography, Unix *Jun 2025*

- Built a secure, multi-user password manager on AWS (EC2 + RDS) with zero-knowledge authentication using Fernet encryption and PBKDF2-HMAC-SHA256 with 1.2M iterations and per-user salts
- Designed scalable PostgreSQL schema with indexing, foreign keys, and CASCADE deletes; enforced SSL/TLS and improved query performance by 30% through optimized data modeling

Stridr - iOS Run Tracker App | SwiftUI, Supabase, MapKit, HealthKit, Core Location *May 2025 – Jun 2025*

- Developed full-stack iOS app with real-time GPS tracking, HealthKit sync, and Supabase backend for secure authentication (including magic link login) and cloud storage; achieved 95% distance accuracy
- Built a SwiftUI dashboard with MapKit-based route visualization and performance analytics for pace, time, and workout history across 50+ sessions