

Andrew Christopher Loh Wei-Yang

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EDUCATION

University of Illinois at Urbana-Champaign

May 2026

Bachelor of Science in Computer Science, James Scholars Honors & Dean's List

GPA: 3.97 / 4.0

Related Coursework: Data Structures and Algorithms, Computer Architecture, System Programming, Database Systems, Topics in Internet of Things, Text Information Systems, Distributed Systems, Communication Networks

TECHNICAL SKILLS

Languages: Python, C/C++, C#, Go, Rust, Java, JavaScript/TypeScript, Bash, YAML, SQL

Frameworks and Tools: Git, GitHub Actions, New Relic, .NET, FastAPI, React, Docker, Kubernetes, Amazon Web Services, Google Cloud Platform, Linux, PowerShell

Libraries: NumPy, Pandas, scikit-learn, TensorFlow, OpenCV, Matplotlib

EXPERIENCE

Relativity ODA

May 2025 – Aug 2025

Software Engineering Intern

Illinois

- Reduced security risk and triage time by 10x using GitHub Actions (PowerShell/YAML) for DevOps internal tooling
- Reduced deployment time by 83% by integrating Harness CI/CD and New Relic deploy gates with automated rollback
- Deployed and debugged services on Kubernetes via Harness + Helm; used k9s and New Relic to triage rollouts
- Removed 2 legacy feature flags in .NET C#, refactoring code paths and tests to reduce tech debt and deployment risk

University of Illinois at Urbana-Champaign

Jan 2023 – Present

Tutor, Introduction to Computer Science I

Illinois

- Led Java tutoring for 100+ students in OOP, algorithms, data structures, mentoring 10+ assistant tutors
- Developed 7 Android apps in Android Studio, integrating RESTful APIs, real-time data exchange, improving learning
- Enhanced student engagement through Java debugging, Agile methodologies, version control (Git), software best practices

Defence Science Organization National Laboratories

Jan 2022 – Apr 2022

Orbital Engineering Research Intern, Sensors Division

Singapore

- Orchestrated trajectory planning for TeLEOS-2 satellite, researched mission-critical parameters and orbital mechanics
- Automated 1000+ simulations with 100× efficiency gain, built a Python + NASA GMAT simulation pipeline (Pandas)
- Automated data processing workflows, enhancing simulation accuracy and reducing manual computation time by 90%

Singapore Armed Forces

Jan 2020 – Nov 2021

Sergeant, S3 Operations Specialist

Singapore

- Planned, managed logistics for 20+ deployments; coordinated weapons, ammunition, tactical assets for 1000+ soldiers
- Trained and led platoon of 30 vehicle operators; awarded Best Commander of the Month & Best Vehicle Commander Section

PROJECTS

Telegram LeetCode Competition Bot | Python, SQLite, Docker, GitHub Actions

Feb 2026

- Built Python Telegram bot tracking LeetCode progress and per-chat leaderboards with account linking and chat-level controls
- Implemented polling of LeetCode's GraphQL with last_seen cursors and cached metadata to process accepted submissions
- Designed scoring with weighted difficulty, timezone-aware windows, and scheduled leaderboards via APScheduler
- Modeled SQLite schema with tombstoning; deployed on Ubuntu homelab via Docker Compose, GitHub Actions, backups

HyDFS & RainStorm Distributed System | Go, TCP/UDP, Distributed systems

Dec 2025

- Built a distributed Go system on 10 VMs, integrating dgrep, SWIM membership, HyDFS storage, and RainStorm streaming
- Detected fail-stop nodes in ~ 0.7–1.1s under packet loss via SWIM+gossip membership, incarnation numbers, and suspicion
- Delivered durable, consistent storage via ring partitioning, RF=3 replication, quorum commits, and re-replication on failures
- Achieved up to ~ 50% of Spark throughput on CSV workloads, isolating coordination / I/O bottlenecks in RainStorm

LibraryWaze: AI People Detection for IoT | TensorFlow, OpenCV, AWS

Dec 2024

- Devised edge AI computer vision pipeline with TensorFlow Lite on Raspberry Pi for real-time object detection
- Implemented OpenCV and NumPy preprocessing pipeline to boost accuracy to 89% in low-power embedded systems
- Refined inference efficiency using model quantization in TensorFlow Lite, cutting per-frame latency by ~50% on Raspberry Pi
- Created under Agile methodology, integrating detection into an IoT system with AWS Lambda, DynamoDB, API Gateway

Facial Recognition for Image Indexing | OpenCV, FaceNet, MTCNN

Dec 2024

- Improved robustness to lighting, angles by 60% with face detection pipeline using OpenCV Haar cascades, MTCNN, FaceNet
- Improved accuracy by 91% for varied-scale, tilted face recognition with two-pass detection and data augmentations
- Achieved 73.4% accuracy using ResNet-based embeddings, cosine similarity, and optimized feature matching

AI Valorant Analytics Application | FastAPI, SQL, React

Aug 2024

- Developed scalable web app with Google Cloud Platform, FastAPI, Vercel, Vite, ML model for predictive match analysis
- Deployed linear regression model in Jupyter Notebook using SQL database data, leveraging continuous model retraining
- Integrated CI/CD with GitHub Actions to automate testing, model updates, and deployment to cloud infrastructure
- Constructed real-time data visualization, interactive dashboards, statistical analysis, and UI/UX design