

Andrew Christopher Loh Wei-Yang

acloh2@illinois.edu | 447-902-1251 | linkedin.com/in/andrew-loh-805340274 | github.com/FPynk

EDUCATION

University of Illinois at Urbana-Champaign <i>Bachelor of Science in Computer Science, James Scholars Honors & Dean's List</i> Related Coursework: Data Structures and Algorithms, Computer Architecture, System Programming, Database Systems, Topics in Internet of Things, Text Information Systems, Distributed Systems, Communication Networks	May 2026 GPA: 3.97 / 4.0
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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 <i>Software Engineering Intern</i> <ul style="list-style-type: none">Reduced security risk and triage time by 10x using GitHub Actions (PowerShell/YAML) for DevOps internal toolingReduced deployment time by 83% by integrating Harness CI/CD and New Relic deploy gates with automated rollbackDeployed and debugged services on Kubernetes via Harness + Helm; used k9s and New Relic to triage rolloutsRemoved 2 legacy feature flags in .NET C#, refactoring code paths and tests to reduce tech debt and deployment risk	May 2025 – Aug 2025 <i>Illinois</i>
University of Illinois at Urbana-Champaign <i>Tutor, Introduction to Computer Science I</i> <ul style="list-style-type: none">Led Java tutoring for 100+ students in OOP, algorithms, data structures, mentoring 10+ assistant tutorsDeveloped 7 Android apps in Android Studio, integrating RESTful APIs, real-time data exchange, improving learningEnhanced student engagement through Java debugging, Agile methodologies, version control (Git), software best practices	Jan 2023 – Present <i>Illinois</i>
Defence Science Organization National Laboratories <i>Orbital Engineering Research Intern, Sensors Division</i> <ul style="list-style-type: none">Orchestrated trajectory planning for TeLEOS-2 satellite, researched mission-critical parameters and orbital mechanicsAutomated 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%	Jan 2022 – Apr 2022 <i>Singapore</i>
Singapore Armed Forces <i>Sergeant, S3 Operations Specialist</i> <ul style="list-style-type: none">Planned, managed logistics for 20+ deployments; coordinated weapons, ammunition, tactical assets for 1000+ soldiersTrained and led platoon of 30 vehicle operators; awarded Best Commander of the Month & Best Vehicle Commander Section	Jan 2020 – Nov 2021 <i>Singapore</i>

PROJECTS

Telegram LeetCode Competition Bot Python, SQLite, Docker, GitHub Actions	Feb 2026
<ul style="list-style-type: none">Built Python Telegram bot tracking LeetCode progress and per-chat leaderboards with account linking and chat-level controlsImplemented polling of LeetCode's GraphQL with last.seen cursors and cached metadata to process accepted submissionsDesigned scoring with weighted difficulty, timezone-aware windows, and scheduled leaderboards via APSchedulerModeled 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
<ul style="list-style-type: none">Built a distributed Go system on 10 VMs, integrating dgrep, SWIM membership, HyDFS storage, and RainStorm streamingDetected fail-stop nodes in ~ 0.7–1.1s under packet loss via SWIM+gossip membership, incarnation numbers, and suspicionDelivered durable, consistent storage via ring partitioning, RF=3 replication, quorum commits, and re-replication on failuresAchieved 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
<ul style="list-style-type: none">Devised edge AI computer vision pipeline with TensorFlow Lite on Raspberry Pi for real-time object detectionImplemented OpenCV and NumPy preprocessing pipeline to boost accuracy to 89% in low-power embedded systemsRefined inference efficiency using model quantization in TensorFlow Lite, cutting per-frame latency by ~50% on Raspberry PiCreated 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
<ul style="list-style-type: none">Improved robustness to lighting, angles by 60% with face detection pipeline using OpenCV Haar cascades, MTCNN, FaceNetImproved accuracy by 91% for varied-scale, tilted face recognition with two-pass detection and data augmentationsAchieved 73.4% accuracy using ResNet-based embeddings, cosine similarity, and optimized feature matching	
AI Valorant Analytics Application FastAPI, SQL, React	Aug 2024
<ul style="list-style-type: none">Developed scalable web app with Google Cloud Platform, FastAPI, Vercel, Vite, ML model for predictive match analysisDeployed linear regression model in Jupyter Notebook using SQL database data, leveraging continuous model retrainingIntegrated CI/CD with GitHub Actions to automate testing, model updates, and deployment to cloud infrastructureConstructed real-time data visualization, interactive dashboards, statistical analysis, and UI/UX design	