

Jonathan Wang

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EDUCATION

University of Illinois Urbana-Champaign

Champaign, IL

Master of Computer Science

Aug. 2024 – Dec. 2025

GPA: 4.00/4.00

Certifications: AWS Cloud Practitioner, Bloomberg Market Concepts Certificate, Illinois Leadership Certificate

Awards: 4th Place, University of Illinois Fall CTF 2024 (cybersecurity competition)

Teaching Assistant: CS 450 - Numerical Analysis | **Course Assistant:** CS 411 - Database Systems

Coursework: Computer Security | Computer Networks | Algorithmic Trading & Quantitative Finance

University of Illinois Urbana-Champaign

Champaign, IL

B.S. in Computer Science & Mathematics with Minor in Statistics

Aug. 2020 – May 2024

GPA: 3.98/4.00 (Magna Cum Laude, Graduated with Highest Distinction)

Awards: Bronze Tablet (top 3% of graduating class), Campus Honor - James Scholar

Coursework: Distributed Systems | Machine Learning | Database Systems | System Programming | Algorithms |

Artificial Intelligence | Data Mining | Parallel Programming | High Performance Computing | Statistics

SKILLS

Languages: Python, Go, C/C++, Java, TypeScript, JavaScript, HTML/CSS, CUDA, SQL

Frameworks & Libraries: React, Node.js, Express, Django, Flask, Bootstrap, PyTorch, TensorFlow, NumPy, pandas

Databases: MySQL, PostgreSQL, MongoDB, Neo4j, InfluxDB

Developer Tools: Git, Bash, Docker, Linux, Google Cloud Platform, Amazon Web Services (EC2, ECS, ECR, RDS)

EXPERIENCE

Full Stack Developer Intern

Jun. 2025 – Aug. 2025

Ensaras, Inc.

Champaign, IL

- Built an **anomaly-detection** ensemble (Isolation Forest, LSTM, Gaussian) on TIG telemetry (Telegraf, InfluxDB, Grafana) to flag sensor faults in early stages at 90+% precision (Python, Machine Learning).
- Developed a hybrid **digital twin** through a calibrated QSDsan process model that ingests live plant data to forecast next-day effluent KPIs, enabling proactive aeration changes.
- Modularized Celery scheduled jobs into reusable, templated tasks, **cutting duplicate code by 45%** and enabling new schedules to ship in < 20 minutes.
- Architected a production-mirrored staging environment and IaC-driven config repo with CI/CD automation that version-controls and auto-syncs configs - enabling full-suite integration tests and **zero-downtime deployments**.
- Cut cloud spend by 27%** and **sustained 97% service uptime** by implementing systemd and Supervisor auto-restarts, tightening VPC/IAM, closing unused ports, and right-sizing AWS resources.
- Steered sprint planning** via Jira/requirements docs for a five-engineer squad to ensure every sprint met closely with business goals; authored a system-wide onboarding guide that cut ramp-up time from 10+ to 5 days (Agile).

PROJECTS

Distributed Transaction System | *Go, Linux Virtual Machine*

- Architected an ACID-compliant, CLI-based banking system; coordinated cross-node deposits/withdrawals with timestamp-ordering concurrency control, eliminating distributed deadlocks and enforcing serializability.
- Sharded account data across nodes and built shard-aware RPC flows, delivering 3× higher TPS than a naive global-mutex baseline under multi-client stress tests.

GPU-Accelerated CNN Trainer | *CUDA, C++*

- Parallelized convolutional layers with tiled kernels, matrix unrolling and CUDA streams, slashing batch compute time from 4000 ms → 120 ms ($\approx 97\%$) and boosting training throughput by 20% under real-world loads.

Real-time ADS-B Tracking and Collision Warning System | *JavaScript, Python, Raspberry Pi*

- Orchestrated an open-source ADS-B receiver chain that streams > 300 live flights over the Chicago area into a 3-D CesiumJS globe for instant situational awareness.
- Engineered a CPA-based risk module accelerated with spatial hashing and Gaussian scoring, shrinking worst-case collision checks from $O(n^2)$ → $O(n \log n)$ and holding UI latency ≤ 150 ms; layered an Isolation-Forest filter to strip spoofed/noisy packets and eliminate false alerts.

PeopleWeave Project - Caesar Research Group | *Javascript, React, D3.js, Python, Neo4j, Research Assistant*

- Built an interactive SIGCOMM co-authorship explorer that lets users discover author-topic relationships.
- Automated data cleanup to cut ETL by 60%; architected a Neo4j graph store that scaled to 100k+ nodes.