

Shivanshu Dwivedi

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EDUCATION

Trinity College <i>Bachelor of Science in Computer Science & Physics</i> • GPA: 4.00/4.00 • Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Databases, Linear Algebra, Discrete Mathematics • Teaching Assistant for Data Structures & Algorithms and Discrete Mathematics: Led weekly labs, graded assignments, and mentored 50+ students for 4 semesters.	Hartford, CT <i>Sep 2022 - May 2026(Expected)</i>
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EXPERIENCE

Founder & Lead Developer <i>Yaaro</i> • Architected for 500K+ Monthly Active Users Scalability: Reduced API latency by 17% by deploying Spring Boot microservices and Redis on a load-tested GCP/Kubernetes architecture. • Scaled App from 0 to 20K+ Users: Led full-stack development of the React Native app, driving user adoption with a performance-tuned UI with robust state management. • Boosted Matchmaking Success by 88%: Engineered a PostGIS geospatial algorithm with geohashing to optimize real-time location queries and user connections. • Automated Deployments with 99.8% Uptime: Deployed containerized (Docker) services in < 10 mins by building a full CI/CD pipeline with Terraform and GitHub Actions.	Mumbai, India <i>Jan 2025 - Present</i>
Software Engineering Intern <i>Reality AI</i> • Handled 100K+ Weekly API Requests: Built and scaled Node.js/Express microservices for an AI coding assistant, integrating OpenAI's GPT-4 API for high-throughput performance. • Cut Deployment Failures by 27%: Containerized backend services with Docker for AWS ECS and refined Jenkins CI/CD pipelines to enable reliable, daily production releases. • Reduced Incident Resolution Time by 64%: Implemented a full observability stack using AWS CloudWatch and Grafana, creating dashboards and automated slack alerts to proactively identify issues.	New York, NY <i>May 2024 – Aug 2024</i>
Machine Learning Research Assistant <i>Trinity College</i> • Enhanced Predictive Accuracy to 94%: Boosted failure-prediction model accuracy from 64% by creating ML pipelines with Sklearn, Keras, and GANs on a 4 TB Alibaba Dataset. • Improved Maintenance Efficiency by 7%: Analyzed over 1 billion time-series records from production systems to generate data-driven insights that optimized hardware replacement schedules.	Hartford, CT <i>Jan 2024 – Present</i>

PROJECTS

TechSwipe (<i>JavaScript, Swift, Node.js, Express.js, Firebase Firestore, SwiftUI, TensorFlow</i>) • Engineered a full-stack swiping app with Node.js/Express backend and Firebase Firestore, achieving 35% faster server response on a 70 GB+ dataset across 100+ collections. • Implemented Word2Vec & Epsilon-greedy ML algorithms on Google Shopping data and drove UI optimizations via A/B tests with 1000+ users—increasing app interactions by 30%.	Github
LIGO Real-time Analytics Pipeline (<i>Apache Flink, Kafka, Python, Kubernetes</i>) • Achieved sub-second end-to-end latency on 100 M+ daily seismic samples by architecting a Kafka→Flink streaming pipeline on Kubernetes to ingest 24 vibration data channels. • Boosted anomaly-detection accuracy by 20% and cut false-positives to under 1% by deploying Wavelet→UMAP→XGBoost models as microservices with Prometheus/Grafana monitoring and Slack alerts.	Github
Microkernel OS (C, x86 64 Assembly, QEMU) • Engineered a microkernel supporting preemptive multitasking, round-robin scheduling, and IPC in C and x86 64 Assembly, optimizing context-switch overhead by 17% and running 8 concurrent user-space tasks on QEMU. • Built a demand-paged virtual memory manager with LRU page replacement and hardware-enforced process Isolation, reducing page faults by 37% and eliminating cross-process memory leaks.	Github

SKILLS

Languages & Frameworks: Python, Java, C, C++, JavaScript, Typescript, Swift, SQL, NoSQL; Spring Boot, Flask, Express, NodeJS, React
Architecture & DevOps: Microservices, REST, GraphQL, FastAPI; Docker, Kubernetes, AWS (EC2, Lambda, S3, RDS, CloudFormation), GCP (GKE, Cloud Functions); Terraform; CI/CD (GitHub Actions, Jenkins)
Data & Observability: PostgreSQL, MySQL, MongoDB, Redis, Kafka, RabbitMQ

LEADERSHIP AND AWARDS

• Phi Sigma Phi – Physics National Honors Society	<i>Jan 2025 - Present</i>
• Vice President, Computer Science Club	<i>Sep 2024 - Present</i>
• Deans' Scholar – 0.1% Highest GPA in Trinity College	<i>Sep 2023 – Present</i>
• Next Genius Full-Tuition Scholar – Ranked 1 st in 60, 000 students across India	<i>Sep 2022 - Present</i>