

JISHNU JANARDANAN

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EDUCATION

B.S. in Computer Engineering | Illinois Institute of Technology | Chicago, IL **May 2026**
Coursework – Data Structures and Algorithms, Machine Learning, Systems Programming, Application Software Design, Operating Systems, Object-Oriented Programming, Probability and Statistics, Mobile Application Development, Computer Organization and Design, Database Organization, Introduction to VLSI Design, Engineering Electronics

CERTIFICATIONS & PUBLICATIONS

Claude 101 | Anthropic Academy (Verified) | June 2026 | [Link](#)

ThinkFast: A Versatile Trivia System for Education, Collaboration, and Communication – Under Review, IEEE EIT 2026 | Paper ID 121

SKILLS

Programming Languages – Python, Java, JavaScript, Dart, Bash, HTML/CSS, SQL, C++

Frameworks & Libraries – React, Vite, FastAPI, Flutter, Node.js, Spring Boot, OpenMP, JUnit

Databases – PostgreSQL, MySQL, DynamoDB, Redis, Firebase

AI/ML & Performance – Neural Network Design (MLP, CNN), Tensor Optimization (NCHW/NHWC), OpenMP Parallelization, Cache Optimization

AI-Assisted Development – Prompt Engineering, AI-Native Workflows (Claude Code)

Cloud & DevOps – AWS (Lambda, EC2, API Gateway, S3, CloudFront, SES, EventBridge, IAM), GCP (Firebase Auth, YouTube Data API), Serverless Architecture, Docker, Git, CI/CD (GitHub Actions), MQTT, Linux/Ubuntu

Distributed Systems & System Design – CAP Theorem, Database Sharding & Replication, Caching Strategies, Message Queues (Pub/Sub), Load Balancing, API Gateway Patterns, Microservices Architecture, Horizontal Scaling, Fault Tolerance, Rate Limiting, Idempotency

Concepts – REST APIs, GraphQL, JWT Authentication, TCP/IP, Multi-Threaded Programming, Unit Testing

WORK EXPERIENCE

Backend Developer Intern | FoodCLUB | United Kingdom (Remote) **Jan 2024 – May 2024**

- Kept user authentication and data retrieval APIs at 99% uptime in production, measured by monitoring dashboards, by building and maintaining Node.js services on AWS EC2
- Cut response latency 30% on the busiest user-facing endpoints by adding Redis caching in front of the REST API
- Standardized request/response formats and error handling across the API by documenting every REST endpoint, and resolved production issues through code review and log analysis

TECHNICAL PROJECTS

SneakersForLess | React, AWS Lambda, DynamoDB, Firebase, Docker | <https://www.sneakersforless.org/> | [Github](#) | Production Application. **Spring 2026**

- Showed the lowest price per sneaker across more than 25 retailers by building a comparison engine that ranks per-store quotes, with weighted relevance search and saved watchlists
- Kept each user's data private by verifying Firebase tokens on the serverless backend (API Gateway, Lambda, DynamoDB), so identity comes from the token and not the request, with a least-privilege IAM role per Lambda
- Stopped duplicate alert emails with an idempotency stamp in the price alert workflow automation, where an hourly EventBridge job checks prices and emails users through SES
- Cut deploy time 80% with GitHub Actions CI/CD for the React frontend on S3 and CloudFront; built Lambda packages in Docker and prototyped the API in FastAPI with Mangum before shipping a lighter raw handler

Old Is Gold – Senior Fitness Platform | JavaScript, AWS Lambda, DynamoDB | <https://oldisgold.fit/> | [Github](#) | Production Application. **Spring 2026**

- Gave users aged 55 and older personalized workout plans and progress tracking, and kept the billable YouTube API key off the client with a server-side proxy
- Blocked bad tokens and runaway traffic by running every API call through RS256 JWT verification that fails closed, per-user rate limiting in DynamoDB that fails open with TTL cleanup, and ownership checks, all covered by unit tests
- Held responses under 200ms in load testing by keying all data to user_id in one DynamoDB partition, making each dashboard load a single query
- Let users track daily nutrition with a food database of more than 50 items, per-serving macros, and daily intake summaries

IoT Smart Device Hub – Device Management System | Java, Spring Boot, MQTT, JUnit, Linux | Illinois Institute of Technology **Spring 2025**

- Synced device state in real time across HTTP and MQTT by building a Spring Boot backend on pub/sub messaging and the observer pattern
- Reached 94% instruction coverage and a 100% pass rate, measured by JaCoCo, by writing a JUnit suite of more than 30 tests

Neural Network Inference Engine | C++, OpenMP, MNIST | Illinois Institute of Technology **Fall 2024**

- Raised cache hit rate 8% and saved 7ms per inference by switching tensor layouts to NCHW/NHWC for better memory access patterns
- Hit 97.5% classification accuracy on MNIST by running MLP and CNN models end-to-end with pre-trained weights, and removed the main compute bottlenecks by parallelizing 300 lines of C++ with OpenMP

Think Fast – Embedded Trivia Game | Python, Raspberry Pi, Arduino, UART Serial | Illinois Institute of Technology **Spring 2025**

- Delivered LED feedback under 100ms by connecting an Arduino to a Raspberry Pi over UART serial for real-time game state, and eliminated all false trigger inputs with software debouncing

Chicago Transit Authority (CTA) Database System | Python, SQL, MySQL, PostgreSQL | Illinois Institute of Technology **Summer 2024**

- Enabled consistent reporting across transit data by designing a relational schema with referential integrity across 6-8 entities and writing MySQL and PostgreSQL queries with window functions and OLAP analytics

INVOLVEMENT

IIT Motorsports (FSAE) **Jan 2024 – May 2024**

- Informed power switch selection for the EV race car by researching quad inverter hardware architectures and writing a decision-matrix analysis