Dhruv Venkat

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Education

University of Waterloo Expected Graduation: 2029
Bachelor of Applied Science in Computer Engineering (Honours) *Waterloo, ON*

Technical Proficiencies

Languages: JavaScript, Python, Java, Embedded C, C++, Apache Groovy, VHDL, SQL, R, XML
Libraries and Frameworks: ReactJS, Three.JS, Jest, JUnit 5, scikit-learn, Pandas, NumPy, Matplotlib, Django
Cloud Technologies: AWS (EC2, S3, IAM, RDS, Lambda, DynamoDB), Microsoft Azure (CosmosDB, AI Foundry)
Developer Tools & Databases: Git, GitHub, Jenkins, Postman, MySQL, SQLite, Redis, Gradle, Maven, Artifactory

Professional Experience

Scotiabank Sep. 2025 – Present
Software Engineering Intern *Toronto, ON*

- Modernized **8 enterprise applications** by upgrading their legacy backend systems from Java 11/17 to Java 21, improving runtime performance, maintainability, and long-term support readiness
- Proactively safeguarded application integrity by **monitoring over 100 security vulnerabilities across three repositories** and remediating them using Checkmarx One and Black Duck, reducing exposure to high-risk threats
- Designed, developed, and deployed a set of AI-powered agents capable of extracting business requirements from user stories, streamlining the requirements gathering process and improving developer productivity
- Partnered with solution architects and financial managers to implement an Tesseract OCR and AI-driven tool for parsing regulatory forms and signatures, reducing manual compliance review effort by **60% and increasing document throughput by 3x**

Tangerine Jan. – Apr. 2025
Platform Engineering (DevOps) Team *Toronto, ON*

- Developed, tested, and deployed Python scripts in a Red Hat Enterprise Linux (RHEL) environment to **scan 100+ GitHub repos for vulnerabilities**, enhancing security posture across the developer ecosystem
- **Designed and maintained five multi-branch Jenkins CI/CD pipelines** to test, troubleshoot, and deploy applications at scale, improving build reliability and delivery speed
- Designed, deployed, and wrote documentation for a company-wide GitHub Copilot license tracker using REST APIs and Apache Groovy, **saving $1000+ per month in underused licenses**
- **Resolved over 50 support tickets** by helping developers triage and troubleshoot Jira and Confluence-related issues, creating new Jira projects, and regularly reviewing access policies for over 10 teams

Projects

StrataFS | *Python, SQLite, FastAPI, Content-Addressed Storage (SHA-256)* Nov. - Dec. 2025

- Engineered a multi-node, **fault-tolerant blob storage** system with consistent hashing and configurable replication, ensuring high availability and a**utomatic failover for distributed file chunks**
- Implemented **versioned manifests** with chunk-level **deduplication**, enabling efficient delta-sync across devices while preserving full file history and supporting offline-first operation
- Integrated **end-to-end client-side encryption** and signed manifests, guaranteeing data integrity and confidentiality without exposing plaintext to the server

Revvo (HackPrinceton 2025) | *ReactJS + Vite, Python, Django, Firebase* Nov. 2025

- Created a web app that allows users to enter retrievable profile information and scrapes real used car listings from around their area that might suit their use case
- Car listings come with various analytics (user sentiment analysis, common defects, dealership reviews, insurance reports) that are loaded on-click
- Users can chat with pre-trained AI chatbots about any car recommended to them, and can download PDF scripts to aid in negotiations with car dealers

FinXpert (UW Fintech Club) | *ReactJS, Python, MySQL, Machine Learning* Mar. - Aug. 2025

- Developed a web application that advises users on alternative banking institutions based on their input
- Utilized a k-nearest neighbor algorithm to create the model, as well as a MySQL database to store information about chequing accounts offered by all of the major institutions and neo-banks in Canada

Monte Carlo Options Pricing Simulator | *Python, Matplotlib, Pandas, Finazon API* Mar. 2025

- Developed a script that allows a user to input a given option's ticker and runs 10,000+ simulations to aid in pricing
- Simulates a variety of market events by introducing variables such as volatility, time to maturity, dividend rates (where applicable), and current price