Yuvraj Bains

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EDUCATION

Carleton University   Ottawa, ON
Bachelor of Software Engineering (Co-op)   *Expected Graduation: Apr. 2028*
- **Notable Courses:** Data Structures & Algorithms **(Python)**, Object-Oriented Software Development **(Java)**, Database Management Systems, Discrete Structures I/II, Computer Architecture, Operating Systems **(C)**
- **Clubs:** Carleton CyberSecurity Club, Carleton AI Society, CuHacking, Carleton Sikh Society

TECHNICAL SKILLS

Programming Languages: Java, JavaScript, Python, C, Ruby, TypeScript, SQL, HTML/CSS, Bash
Frameworks: React.js, Spring Boot, Node.js, Express.js, Flask, FastAPI, React Native, ExpoGO, JUnit
Databases & Cloud: PostgreSQL, MongoDB, NoSQL, AWS, Google Cloud, Docker, DynamoDB
Libraries & Analytics: Pandas, NumPy, SciPy, Matplotlib, PyTorch, TensorFlow, OpenCV, YOLOv8
Developer Tools: Git, GitHub Actions, REST APIs, Jira, Agile, Postman, Linux (Ubuntu/Debian)
Spoken Languages: English, French, Punjabi

WORK EXPERIENCE

Academic Tutor   May 2025 - Present
Tutorax   *Ottawa, ON*
- **Improved student academic performance by 30%** by developing systematic algorithmic problem-solving methods for 5+ students in Discrete Math, Differential Equations, and Python **resulting in higher course grades**

Google Chromebook Brand Ambassador   June 2024 - Oct. 2024
Premium Retail Services   *Ottawa, ON*
- **Increased Chromebook adoption rates by 25% across 3+ retail locations** by implementing data-driven marketing strategies and real-time consumer behavior analytics **generating additional monthly revenue**

PROJECTS

Distrubuted AI/ML NFL-Fantasy System | *Python, React, FastAPI, TensorFlow*   July 2025 - Aug. 2025
- **Engineered scalable ML pipeline with 90%+ accuracy** using **LightGBM** ensemble methods, **Docker** containerization, and automated CI/CD processing 5+ seasons of NFL datasets
- **Built high-performance FastAPI backend** handling 100+ concurrent requests with sub-200ms latency through fault-tolerant microservices architecture
- **Developed end-to-end MLOps pipeline with automated model deployment** using **joblib** serialization, batch prediction processing, and real-time inference **serving predictions through containerized cloud infrastructure**

Nexttern: Distributed Full-Stack Internship Platform | *Java, Spring, AWS, React*   June 2025 - Aug. 2025
- **Automated** collection of 500+ internship listings weekly by developing **JSoup web scraping** scripts, supporting **50+** concurrent users with **sub-200ms** response times **through distributed AWS Lambda and DynamoDB**
- **Ensured 100% secure multi-tenant data isolation** by containerizing **Spring Boot backend** with **Docker**, implementing deduplication algorithms and **PostgreSQL Row-Level Security across multiple data sources**
- **Achieved zero API security vulnerabilities** by building **React.js frontend** with **JWT** authentication and OAuth 2.0, **enabling automated deployments through GitHub Actions CI/CD**

RoadWise: AI/ML Mobile Potholes Data App | *React Native, Python, YOLOv8, Flask*   May 2025 - Present
- **Achieved 95% pothole detection accuracy with 50ms alert latency** by training **YOLOv8** computer vision models on 1,000+ annotated road images **for real-time municipal road safety**
- **Reduced mobile testing overhead by 40%** by building cross-platform application with **React Native** and **Expo Go**, **enabling real-time device synchronization and automated testing**
- **Delivered comprehensive municipal road analytics dashboard** by designing fault-tolerant backend with **Docker**, **PostgreSQL**, and **REST APIs** processing large-scale road condition datasets **for city infrastructure planning**

NHL Live Goals Backend Streaming System | *Python, Twilio, Live Data APIs*   Jan. 2025 - Mar. 2025
- **Delivered sub-5 second goal notifications with 99.8% uptime** by building scalable backend integrating NHL Live Game API and Twilio SMS services **for real-time sports updates**
- **Reduced serverless deployment costs by 85%** by optimizing scheduling algorithms while maintaining secure authentication and dynamic user management **across multiple user tiers**

CERTIFICATIONS

AWS Certified Cloud Practitioner (June 2025)
Google Cybersecurity Professional Certificate (May 2025)
NVIDIA Introduction to Transformer-Based NLP (Aug. 2025)