

# Esad Kaya

Ottawa, ON

ekaya064@uottawa.ca — (613)-261-3853 — LinkedIn Profile — GitHub Profile

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## Education

### Honours Bachelor of Science in Computer Science (Co-op)

Sept 2022 – Dec 2026

*University of Ottawa, Ottawa, ON*

## Awards:

- Winner of Hack The Hill II: Ross Video FPGA Challenge (2024)
- Admission Scholarship by University of Ottawa (90–95% admission average)
- 1st Place in Region by University of British Columbia Michael Smith Physics Olympics (2021)

**Relevant Coursework** (selected): Data Structures & Algorithms, Design and Analysis of Algorithms, Programming Paradigms, Databases, Advanced C++ Programming, Computer Architecture, Software Engineering.

## Technical Skills

- **Languages:** Python, Java, JavaScript/TypeScript, C/C++, PHP, Lisp (Racket), SQL, DAX, Rust, Go
- **Libraries / Tools:** NumPy, Pandas, Matplotlib, Scikit-Learn, TensorFlow, ONNX Runtime, OpenCV, RKNN Toolkit, PyQt, BeautifulSoup, Selenium, Playwright, Firebase, Supabase, PostgreSQL (incl. PostGIS), Redis, Power BI
- **Web Development:** Flask, HTML/CSS, XML, JavaScript (ES6+), React, TypeScript, Node.js, NestJS, RESTful APIs, GraphQL
- **Data Science & AI:** NLP, Machine Learning, Time-Series Analysis, Edge AI (quantized CV models, ONNX), Data Visualization, Web Scraping, Large-Scale Data Processing
- **DevOps & Parallelization:** concurrent.futures, Threading, Multiprocessing, Docker, Git/GitHub, API Integrations, Cloud Services (AWS EC2, Cloudflare, Firebase, Gemini API), Linux shell scripting
- **Operating Systems:** Windows, Linux (Ubuntu/Debian), macOS
- **Embedded Systems & Hardware:** ESP32, Orange Pi, Arduino, Sensors (mmWave, accelerometer, GPS), LTE modems, FPGA (Quartus), PCB Design (KiCAD), CAD (SolidWorks)
- **Other:** OCR, Financial Data Analysis, Agile Development, UML Diagrams, Edge-to-Cloud System Architecture

## Experience

### Support Engineer Intern

Sept 2025 – Dec 2025

*Solace, Canada*

- Provided technical support for Solace PubSub+ products, resolving customer issues efficiently.
- Documented solutions and updated knowledge base articles to assist customers and internal teams.
- Communicated technical solutions to customers with varying levels of expertise, ensuring clear understanding.

### Software Developer Intern

Jan 2025 – April 2025

*Communications Research Center, Canada*

- Developed cross-platform GUI research tools using **PyQt**, enhancing researcher workflow efficiency.
- Generated data visualizations for technical reports using **Matplotlib**, improving clarity of research findings.
- Optimized data pipelines using Python **parallelization**, reducing execution time.
- Implemented automatic script generation for quick setup, reducing setup time by **98%** and startup time by **95%**.

### Student Junior Business Analyst

May 2024 – Aug 2024

*HR – Infrastructure Canada, Ottawa, ON*

- Prototyped, designed, and built interactive dashboards using **Power BI** and **DAX** for senior directors.
- Ensured data consistency by performing cleaning and transformation on HR datasets using **Power Query**.
- Streamlined data pipelines by standardizing formats and handling missing data, improving report generation speed.
- Delivered data-driven insights through reports and dashboards, supporting senior management's decision-making.

## Technical Support Officer

Raindrop Janitorial Services Corp., Ottawa, ON

Jan 2020 – Present

- Resolved hardware, software, and network issues, ensuring secure and uninterrupted business operations for head office.
- Efficiently executed payroll with **QuickBooks**, handling 50+ employee paychecks accurately and on time.
- Developed and maintained the company website using **PHP**, **HTML/CSS**, and **JavaScript**, enhancing online presence and customer engagement.
- Developing a new internal WFM system to optimize employee scheduling and task management using **React** and **Node.js**.

## Projects

### AutoTrader Web Scraping Application

*GitHub: Integer-Conversion-Error/AutoScraper*

- Developed a Python/Flask web app to automate AutoTrader.ca vehicle searches with advanced filtering.
- Implemented **concurrent scraping** ('concurrent.futures') and **persistent storage** of search criteria/results using **Firebase**.
- Integrated **AI analysis** for listing reliability, pricing insights, and negotiation points via Google Custom Search API.

### Kaya-Auto: Autotrader-like Web Application

*GitHub: Integer-Conversion-Error/Kaya-Auto*

- Developed a comprehensive web application similar to Autotrader for vehicle buying/selling.
- Implemented distinct user roles (Customer, Private Seller, Dealer, Admin) and robust backend (Node.js/Express.js) and dynamic frontend (React/Vite).
- Designed and integrated a sponsored listings feature with payment gateway (Stripe/PayPal) and automated expiry management.
- Structured a PostgreSQL database schema, including detailed UML diagrams for data modeling.

### Notesplicer: Note Summarization and RAG System

*GitHub: Integer-Conversion-Error/Note-Splicer*

- Developed an AI system for processing, organizing, and querying personal notes using Retrieval-Augmented Generation (RAG).
- Transformed unstructured text notes into a structured, searchable knowledge base with generative AI.
- Built a persistent ChromaDB vector database for efficient semantic search and information retrieval.
- Implemented RAG with Large Language Models (LLMs) like Groq/Ollama for coherent answer generation from notes.
- Used LoRA fine-tuning to enhance model performance on domain-specific note content.

### AI Budget Agent Web App

*GitHub: Integer-Conversion-Error/Budg-It*

- Developed an **AI-driven** budgeting tool using **Gemini 2.0** and Python to assist users in managing financial scenarios.
- Implemented **receipt parsing** with **OCR** to automatically extract and categorize expenses.
- Designed an intuitive web interface for seamless user interaction and financial tracking.
- Integrated data visualization to provide users with clear insights into their spending habits.

### Hugging-Stocks: Stock Market Analysis Tools

*GitHub: Integer-Conversion-Error/Hugging-Stocks*

- Developed Python tools applying **ML** for stock market insights, exploring sentiment analysis, time series modeling, and external data integration.
- Implemented **sentiment analysis** (NLP on news/GDELT) and **Hidden Markov Models (HMMs)** for **time series analysis** to identify market states/patterns.
- Analyzed stock analyst price predictions to identify trends and assess potential correlations with market movements.
- Demonstrated skills in Python, Machine Learning (ML), Natural Language Processing (NLP), Time Series Analysis, and handling diverse financial data sources.

## Transferable & Soft Skills

- Analytical problem solver and quick learner
- Excellent communication & teamwork; strong work ethic
- Resourceful, self-taught in new technologies
- Time management, attention to detail, and adaptability
- Languages: Native English and Turkish; intermediate French; elementary Russian