JOHN-ANTHONY ELENIS

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PROFILE

Computer Engineering graduate from the University of Guelph with a background in software and full-stack development. I've worked with both low-level and high-level programming and am familiar with building modern web applications using React.js, Next.js, Node.js, and Docker. After taking a temporary hiatus from engineering during the pandemic, I'm now excited to return to the field in a junior developer role.

EXPERIENCE

Software Engineer

Magna | St. Thomas, ON

- Delivered full-stack tools with PHP, SQL, and JavaScript that increased data accuracy and reduced system downtime
- Created dashboards for real-time monitoring and operational insights using Grafana and TypeScript
- Collaborated with IT and engineering teams to enhance production line support

Machine Learning Engineer

Robotics Institute | Guelph, ON

- Contributed to an AI-driven robotic system for automated greenhouse harvesting
- Built a JavaScript front end integrated with a Django REST API for image labeling and segmentation
- Automated image preprocessing in Python to support real-time ML workflows
- Built an interactive SPA using Vue.js to streamline image segmentation for building a machine learning dataset

EDUCATION

Bachelor of Engineering (B.Eng.), Systems and Computing

University of Guelph

Graduated with Honours

- Worked with real-time systems, low-level programming, and system architecture in both solo and team-based settings
- Applied knowledge across a wide range of platforms, including microcontrollers, Linux environments, and custom hardware integration
- Led and participated in group projects focusing on agile collaboration, thorough documentation, and iterative design processes

Relevant Coursework: Software Design & Architecture · Object-Oriented Programming · Data Structures · Operating Systems · Real-Time Systems · Computer Networks

Master of Applied Science (MASc), Electrical and Computer Engineering (Incomplete)

University of Waterloo

Maintained an 88% average before withdrawing due to COVID-19 circumstances

- Participated in a research team focused on fully homomorphic encryption (FHE) for privacy-preserving machine learning
- Gained hands-on experience with real-time signal analysis and secure communication protocols using Python and C
- Applied statistical signal processing techniques such as filtering, estimation, and frequency analysis to extract insights from noisy data
- Studied digital systems security through lab-based coursework, including threat modeling, authentication protocols, and applied cryptography

TECHNICAL SKILLS

Front-End

- Built responsive single-page applications with React.js, Next.js, and Material UI
- Created a Vue.js based image segmentation tool for machine learning

Back-End

- Built PHP/SQL tools at Magna International to improve data accuracy and reliability
- Developed REST endpoints with Django

DevOps & Tooling

- Containerized applications with Docker
- Scripted automations in Bash
- Collaborated on version control with Git

Data & Analytics

- Optimized SQL Server queries for real-time Grafana dashboards
- Built Python ETL pipelines with NumPy and Pandas for machine learning workflows
- Created clear visualizations in Jupyter using Matplotlib

Embedded & Low-Level Programming

- Leveraged Linux system interfaces, file I/O, sockets, and concurrency
- Implemented real-time DSP keyword spotting on ARM Cortex-A in C/C++

PROJECTS

Low-Power Audio Front-End for Keyword Spotting

Published in the 2020 IEEE conference: https://ieeexplore.ieee.org/document/9255693

- Co-developed a low-power, real-time keyword spotting system deployed on ARM Cortex-A9 hardware
- Combined digital signal processing techniques (filtering) and machine learning (CNN) to detect keywords
- The project focused on optimizing performance for embedded environments with strict power constraints

Linux Login Manager – Personal Project

Available on GitHub: https://github.com/jelenis/login-manager

- Designed and implemented a customizable login interface for Linux using LightDM's Webkit2 Greeter
- Enabled users to create professional Linux splash screens by defining JSON-based themes with dynamic UI components
- Built using jQuery and Materialize CSS for responsive layouts, DOM control, and polished UI design
- Developed an event-driven JavaScript API to manage authentication flow, session selection, and user input handling
- Integrated with PAM and LightDM to enable secure credential verification
- Employed modular JavaScript architecture and clean separation of concerns to support extensibility and maintainability