

Bipon Roy

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Experience

Ontario Power Generation

Professional Engineering Year Student (Co-op)

May. 2025 – Current
Pickering, Ontario

- Developed a custom **Python** automation tool with a **Tkinter**-based GUI to parse and consolidate invoices from multiple sources into a single dynamic summary file, eliminating manual cross-referencing and saved project leaders several hours each week in project cost tracking.
- Engineered a **Python** automation script to extract and filter project-specific purchase order data directly using **ODBC API** for **SQL Server**, streamlining multi-source data aggregation and improving financial reporting accuracy.
- Authored a diagnostic **Python** utility to identify and flag corrupted files causing Windows network drive execution errors, reducing more than **10+** hours of manual QA testing and improving system reliability.
- Oversaw the financial approval workflow for more than **\$20M** in invoices across major project installations, ensuring cost accuracy, vendor compliance, and timely reconciliation between purchase orders, invoices, and forecasts.
- Led the initiation and planning phases for the replacement of a mission-critical Gamma Detection System, including drafting the Project Charter, Business Case, and executive pitch that secured **\$2.5M** in funding.

Jennifer Kominek Interior Design

May 2023 – Sept. 2023
Toronto, Ontario

- Front-End Developer Intern
- Spearheaded the development of the company website from concept to launch using **React.js**, resulting in a **90%** increase in site viewership and a **2-minute** extension in audience retention
 - Leveraged advanced **Google SEO** practices alongside **JavaScript** frameworks including **PhotoSwipe**, **Isotope**, and **Bootstrap** to enhance photo handling and layout specifications
 - Optimized images with editing tools and implemented lazy loading with compression techniques, reducing data retrieval times by **50-200ms** while maintaining high resolution and clarity

Skills

Coding Languages: Java, JavaScript, HTML/CSS, PHP, SQL, Python, C/C++

Libraries & Frameworks: React.js, Node.js, Express.js, TensorFlow, OpenCV, JQuery, Axios, REST API, Mongoose, Docker, Bootstrap, Isotope.js, Three.js

Developer Tools: Git, BASH/ZSH, NPM, MongoDB, MySQL, ESLint, Nodemon, Postman, SDK, SWT, QT, Vim

Education

Western University

Sept. 2020 – Dec. 2026

Bachelor of Science, Computer Science

Notable Courses: Data Structures & Algorithms, Operating Systems, Databases, Artificial Intelligence, Compilers

Projects

Machine Learning Golf Swing Visualizer

- Configured **TensorFlow MoveNet**, **PoseNet**, and **BlazePose** models using **MediaPipe** for video tracking, predictions, and for side-by-side machine learning model comparison
- Built and rigged a custom 3D human model using Blender and animated predicted movements using **Three.js**
- Implemented **WebGL** optimizations and reduced input frame resolution for increased prediction speeds

Emergency Alerts Monitor

- Developed an Android safety app using **Kotlin** and **Android Studio** to track and display real-time public emergencies, health hazards, and dangerous activities in local regions
- Configured BeautifulSoup, a **Python** web scraper to extract information from live feeds and used the Android Development Kit to simulate pre-deployment testing for different hardware and operating systems

Arduino Mars Rover

- Soldered a custom **PCB** using **Arduino Nano** and 2x **L293D** motor driver chips to manage power and logic
- Modified custom IR remote codes to implement motor drive logic and halt function to bypass built in repeat signal