


# Timothy A. MacDonald

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## Education

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**Seneca Polytechnic – Computer Engineering Technology**

North York, Ontario

Ontario College Advanced Diploma

- Vector works Associate Certification

## Summary

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Recent graduate of the Computer Engineering Technology program with an advanced diploma. I am passionate about technology and particularly enthusiastic about the software development process. My education provided me with a solid foundation in software development, including proficiency in programming languages such as Java, C#, and Python. I have hands-on experience with database management, network security, and embedded systems. I also developed skills in project management, problem-solving, and teamwork through various collaborative projects and practical coursework.

## Skills and Abilities

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- Programming Languages: C++, C#, Python, Java, XHTML, CSS
- Networking
- Database Management
- Able to work with multiple Operating Systems
- Background Knowledge in Operational Security
- Familiar with the Linux Environment
- Fundamental knowledge of core web principles (the DOM, HTTP, Web Servers)

## Projects

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### **SmartSpot - Developed Using: Python, Java, HTML, CSS**

Developed a Smart Parking Solution using Java, HTML+XML, CSS, and Eclipse IDE. It offers a paid membership parking lot solution to address the common issue of finding reliable parking in busy areas. Using Python, HTML, Java, and CSS, the system ensures guaranteed parking availability for members, significantly reducing the time and stress associated with searching for parking.

- Microcontroller: Raspberry Pi running Python for system control.
- Web Server: Hosts an HTTP website for remote monitoring and control.
- Database: Stores secure passphrases and membership details.
- Sensors and Output Devices:
- RFID fob reader for secure member entry.
- Keypad for user interaction.
- Sensors for real-time parking spot monitoring.
- LCD screen, LED indicators, for user feedback.
- Security camera for real-time surveillance.

### **Vacation Reservation System(Desktop Application)**

- Desktop application that takes flight information from online and imports pictures of vacation as well as its description and price.
- Logged Customer information like name, price of ticket, location, and date into a database created with MS Access.
- Developed in C# using Visual Studios Code and MS Access.

### **PiGuard – Prototype Security System**

- Deployment of sensor circuits around the premises.
- Continuous communication between sensors and a central server via MQTT protocol.
- Alarm activation if guarded item(s) go missing, triggering alerts throughout the entire premises.
- Security personnel assess the situation and decide whether to deactivate the alarm or not.
- Prototype security system utilizing Raspberry Pi, ESP32, or any other microcontroller.
- Utilizes MQTT protocol to detect and respond to potential threats in real-time.
- Multiple clients connect to the same broker or server over Wi-Fi to read alarm status.
- Capable of having multiple detection circuits relaying alarm status to different topics on the server.
- Developed in Python and C++ using the Paho.MQTT Library for broker connection.

### **Bus Reservation Website**

Developed a Bus Reservation Website using Java, HTML+XML, CSS, and Eclipse IDE. The project, managed by a SQL database, handled user accounts for the login page. Key components included Servlets and Filters for data computation and display, Data Access Objects (DAOs) and DAO Factories, custom requests and exceptions, and Servlet Context Listeners for database resource management. JSPX pages were used for dynamic HTML content with JSP expressive language.

- Languages and Tools: Java, HTML+XML, CSS, Eclipse IDE
- Database: SQL
- Backend: Servlets and Filters for data processing
- Design Patterns: Data Access Objects (DAOs) and DAO Factories
- Resource Management: Servlet Context Listeners
- Frontend: JSPX pages for dynamic HTML content

## **Experience**

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### **Swiss Chalet – Line Cook**

Lindsay, Ontario

- Assisted in closing the restaurant nightly.
- Prepped food of the restaurant for opening and closing.
- Extensive knowledge of food preparation and how to take care of kitchen equipment, as well as cook times and proper storage for the food.

### **Pied Eyed Monk – Line Cook**

Lindsay, Ontario

- Assisted in closing the restaurant nightly.
- Capable of working under pressure and am used to serving 100-200 guests per day.
- Have experience catering events/weddings upwards of 200 people held in the restaurant.
- All meals were prepared from scratch.

### **Seneca College Convenience Store - Sales Associate**

North York, Ontario

- Operated with minimal supervision, demonstrating strong self-management skills.
- Stocked shelves efficiently and maintained product displays.
- Assisted customers at the checkout, providing excellent customer service.
- Conducted inventory maintenance to ensure accurate stock levels.
- Ensured the correct temperatures of frozen and cooled foods, adhering to food safety standards.
- Prepared nightly balance sheets to account for daily transactions and reconcile cash registers.