University of Waterloo

Co-operative Work Terms

Suraj Patel
20849665
2A Computer Science, Honours, Co-operative Program

Work Term	Employer	Evaluation
May - Aug 2020	Ontario Ministry of the Attorney General Public Guardian and Trustee Toronto Ontario Canada System Support Officer (SSO) - Programmer	OUTSTANDING

Planned Future Work Term(s)

Jan - Apr 2021
Sep - Dec 2021
May - Aug 2022
Jan - Apr 2023
Sep - Dec 2023

Suraj Patel

2A Honours Computer Science Student

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Technical Skills

Languages: C# | PL/SQL | C | C++* | Java | R* | Python | Assembly | Racket [Lisp] | Turing [Pascal] | Bash*

Techniques: Object Oriented Programming | Memory Management | Abstract Datatypes | Graph Theory | Recursion | Algorithms | Complexity | Functional Programming | ETL Pipeline | Advanced Design Patterns* | MVC Architecture* | Software Testing*

Technologies: Oracle Databases | .NET | Git* | Visual Studio | Vim* | Virtual Machines | SSRS (SQL Server Reporting Services) | Unity | Arduino | Windows | OS X | Linux* | Low Level Hardware Design | Enterprise Networks & Servers | SolidWorks

*By Dec 2020

Work Experience

Software Developer – OPGT [Ministry of The Attorney General] **May – August 2020**

Pay Statement Processing

- Single-handedly created a **multi-language process** to extract Pay Statement data into a database and process it for a SSRS Report
- Developed a **Windows Service** with C# and .NET to monitor a network location for new files to validate and process in a database
- Utilised an **Event Watcher** to monitor a network location and the **Oracle Data Provider** to communicate between C# and a database
- Used **PL/SQL** to create tables and a package of stored procedures in a database to process data and communicate with C# and SSRS
- Efficiently implemented this **ETL** process by using **Global Temporary Tables**, using **Scalar Subquery Caching**, and compacting code
- Presented the data for the end user in the reporting portal by using **SSRS** to interact with the database to generate pay statements

Fund of Funds VM

- Resurrected an old program and database used to return money to people effected by a scam by using a **VM (Virtual Machine)**
- Setup a **Windows 2000 Server** VM where I mounted HDD extracts and setup a database from a backup file with **Microsoft SQL Server**
- Troubleshooted the program by registering .dll's, changing windows and database settings, and running installers hidden in the old C:/

Additional Experience

FIRST Robotics Competition – District Finalists **September 2018 – June 2019**

- Worked as part of the **student run team** #6866 (The Space Invaders) to design, 3D model, build, and compete with a robot
- Collaborated with my team through **GitHub** during the process of designing the 3D model of the robot assembly with **SolidWorks**
- As a team, hosted workshops at public libraries to introduce and promote STEM to the youth in our community

YMCA Teen Night Council Member **July 2017 – June 2019**

- Responsible for all the programs in the whole YMCA building for 3 hours a week as part of a **council of volunteers**
- In-charge of planning, setting up, and executing the activities for the night
- Gained leadership skills by being in-charge of an entire building full of high school students of the same age group

Projects

Arduino Controlled Crane **January 2018**

- Utilised an **Arduino** to analyse analogue joystick input, process the input, and output analogue signals to servo motors
- Implemented functions to partially automate motion, allowing the crane to complete assigned tasks in 20% of the smallest timeframe

Platformer Game **January 2019**

- Developed a platformer with the Turing language which lacks relevant functionalities past drawing shapes with given coordinates
- Implemented the spawning of game objects using Object Oriented Programming as well as implemented the entire physics from scratch

Awards & Achievements

March 2019 — FIRST Robotics Competition District Finalists
June 2019 — York Region Excellence In Mathematics Award
— Canadian Senior Mathematics Competition – Top 3%
January 2017 — Intro To Computer Science In Python – Certificate of Completion [codehs.com]

UNIVERSITY OF WATERLOO
UNOFFICIAL GRADE REPORT

Suraj Patel
20849665

2A Computer Science, Honours, Co-operative Program

Fall 2020

CS	245	Logic and Computation	
CS	246	Object-Oriented Software Devel	
ECON	212	Introduction to Game Theory	
MATH	239	Intro to Combinatorics	
STAT	230	Probability	

Term Average: N/A Decision:

Spring 2020

PD	11	Technical Writing	CR
COOP	1	Co-operative Work Term	CR

Term Average: N/A Decision:

Winter 2020

PD	1	Career Fundamentals	CR
CS	136	Elem Alg Design & Data Abstrac	78
ECON	101	Intro to Microeconomics	79
MATH	136	Linear Algebra 1 (Hon Math)	72
MATH	138	Calculus 2 For Honours Math	81
PHYS	122	Waves, Electricity & Magnetism	69

Term Average: 75.8 Decision: Good standing

Fall 2019

CS	135	Designing Functional Programs	92
MATH	135	Algebra for Hons Mathematics	60
MATH	137	Calculus 1 for Honours Math	77
PHYS	121	Mechanics	85
SEQ	2	Co-op Sequence 2	
SPCOM	100	Interpersonal Communication	73

Term Average: 77.4 Decision: Good standing