

ANOUSHKA PATHAK

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2A MECHATRONICS ENGINEERING - UNIVERSITY OF WATERLOO (2023)

LANGUAGES	SOFTWARE	HARDWARE	COURSES
C++ Python Javascript SQL	PHP HTML+CSS VHDL	Git Flask React PostgreSQL	XCode Vagrant AutoCAD Solidworks
		Arduino FPGA design PLC programming	Digital Logic & Microprocessors Data Structures and Algorithms Engineering Graphics and Design (GD & T)

Work Experience

Web Application Developer - University of Waterloo | Sept - Dec 2019

- Built DoorSign, app allowing faculty staff to see if other staff are in office or away. Users can set their status + return times and custom messages
- Created a **postgres database** and used **React-Flask** for front-end
- Planned roll-out for **department wide implementation** and **performed demos** for other departments on campus
- Updated SAT (School Admin Tool), React-Flask app for managing data for university classes, research groups and resources
- Helped improve **SQL database** design by modifying table relations
- Used **SQLAlchemy** to allow users to fetch, edit and create data
- Improved UI** to be more intuitive and accessible - redesigned page layout and added warnings + hints to improve user flow
- Used **Vagrant** to maintain dev environments for apps being worked on
- Used **Gitlab for source control** and collaboration with other engineers

Programmer and computer support - Environment Canada | Jan - Apr 2019

- Developed a web app for users to easily input entries in a database using **AJAX, SQL, and PHP**
- Improved a file-uploading tool to handle large files using **python scripts**
- Debugged and fixed file copying/transferring **bash scripts** in preparation for a department-wide update of Windows 10
- Implemented **dynamic menus and inputs using jQuery** and improved UI design using **Bootstrap CSS** for other misc. tools

Relevant Projects

Digital logic coursework | Jan - Apr 2020

- Used **FPGA boards** to implement logic gates using **VHDL**
- Programmed a **PLC** to control a **robotic arm** that moves along a grid system to simulate a pick-and-place scenario
- Gained familiarity with using ladder logic and state diagrams to implement logic

Engineering graphics & design | Sept - Dec 2018

- Created many engineering drawings of machined pieces to practice **orthographic projection** and **GD&T** using **AutoCAD** and **SolidWorks**
- Designed and **3D printed** a cellphone stand using **SolidWorks**

Biomechatronics Club | Sept - Dec 2019

- Developed a pressure sensor mat to measure concentrated areas of pressure over long periods of time to identify potential discomfort for bed-ridden patients/wheelchair users
- Used **multiplexer** to read multiple sensors and programmed an **Arduino** to read sensors and display the information

Jenga robot & pneumatic arm | Sept - Dec 2018

- Worked in a team to design+build a robot that sets a Jenga tower using Lego and Tetrix kits
- Programmed in **RobotC**, working with various **sensors** and **timers**
- Designed a **robotic arm** that places small items on hooks with **accuracy and precision** using Tetrix kits and pneumatics