AMANDA LAU

B.AS Mechatronics Engineering / University of Waterloo / lau.amanda.h@gmail.com

SUMMARY OF QUALIFICATIONS

- Skilled with Python, SQL, Delphi, MATLAB, C, C++
- 8 months experience automating mechanical test fixtures using Python or Delphi
- Image processing using OpenCV, ImageJ, and Python to quantitatively assess image quality
- PCB design and soldering experience
- SolidWorks, AutoCAD, and rapid prototyping experience
- Leadership, organization, and teamwork skills, demonstrated through teaching and management experience

EDUCATION AND AWARDS

BACHELOR OF APPLIED SCIENCE

UNIVERSITY OF WATERLOO **(SEP 2014 – JUNE 2019)**

Mechatronics Engineering, Honours, Co-op

- President's Scholarship of Distinction (2014)
- Term Dean's Honours List (Fall 2014, Fall 2018)
- President's Research Award (2018)
- Best Manufactured Prototype (Capstone Engineering Project, 2019)

Notable Projects:

- 4A,4B: Cardobot: Automated machine for sorting trading cards using vacuum pickup and image processing. Won award for best manufactured prototype. Electrical lead and mechanical designer.
- 3B: Autonomous underwater vehicle. Designed and built an underwater vehicle to navigate and underwater obstacle course. Project manager and programmer.
- 2B: Finite element analysis of a heat sink. ANSYS was used to conduct a finite element analysis of a heat sink to determine the relationship between heat sink size and number of fins.
- 2B: Line following robot. A robot was built with optical sensors and a magnetic hall effect sensor to follow a course mapped out with black tape and magnets.

ONTARIO SECONDARY SCHOOL DIPLOMA

SACRED HEART CATHOLIC HIGH SCHOOL **(SEP 2010 – JUN 2014)**

- Honours for Academic Excellence (2014)
- Governor General's Award, Bronze (2014)

EXPERIENCE

UNDERGRADUATE RESEARCH ASSISTANTSHIP

NRE LAB, UNIVERSITY OF WATERLOO **(SEP 2018 – CURRENT)**

- Developed Android app to display pressure readings from a Bluetooth prosthetic socket, providing users with feedback on how to adjust their prosthetic for maximum comfort and health.
- Programmed Arduino-based Bluetooth module to process sensor data and transmit it to a paired Android device

EMBEDDED TEST DEVELOPER INTERN

ECOBEE **(MAY 2018 – AUG 2018)**

- Finalized hardware design and completed software drivers for a new test fixture for firmware
- Built the test fixture to run firmware QA tests autonomously, reducing over 40 man-hours of manual testing to under 1 man-hour of work
- Created and scripted test cases for thermostat firmware using Selenium and Python

WEEF TA COORDINATOR
UNIVERSITY OF WATERLOO – FIRST YEAR OFFICE **(SEP 2017 – DEC 2017)**

- Lead team of five teaching assistants for the most organized Fall term of first year Mechatronics Engineering in three years
- Lectured and tutored about the engineering design process, project management, and engineering graphics principles and software (SolidWorks and AutoCAD)

OPTICAL ENGINEERING CO-OP
SYNAPTIVE MEDICAL **(JAN 2017 – APR 2017)**

- Automated optical and mechanical equipment for unsupervised data collection using OpenCV
- Created testing GUI and developed Python and ImageJ scripts for more efficient data analysis
- Validated and documented test processes to meet ISO standards
- Provided hardware/software support for off-site tests of prototypes

HARDWARE/SOFTWARE SUPPORT SPECIALIST
IRIDIAN SPECTRAL TECHNOLOGIES **(MAY 2016 – AUG 2016)**

- Created new features for existing optical software in Delphi, including support for motion systems and new optical measurement hardware
- Built new applications in Delphi to optimize analysis workflow
- Refactored old code for maintainability and better implementation of object oriented principles

CIRCUIT BOARD MANUFACTURING
UNIVERSITY OF WATERLOO – 3D PRINT CENTRE **(SEP 2015 – DEC 2015)**

- Operated and maintained circuit board manufacturing equipment (mill, press, chemical baths, curing oven, UV table) to create prototype printed circuit boards for customers
- Designed, commissioned, and implemented a new workstation that noticeably improved workflow and final product quality
- Consulted for circuit layout and 3D printing design inquiries

TECHNICAL SUPPORT NINJA
TOP HAT **(DEC 2014 – APR 2015)**

- Investigated and resolved customer problems through email and phone support
- Created update and search queries for customer support team using SQL
- Consolidated and analyzed data from customer support software to provide performance reports to team members and team management

EXTRACURRICULARS

Class Representative, Waterloo Engineering Endowment Fund Council **(University of Waterloo 2018-2019)**
Met to review funding proposals and represent class interests when allocating funds

President, Waterloo Science Fiction and Fantasy Club **(University of Waterloo 2017-2018)**
Organized weekly meetings, biweekly movie nights, biweekly short story discussions, term events, and club administration

Firmware, Waterloo Formula Electric Design Team **(University of Waterloo 2017)**
Wrote code to enable SPI communication for an ade7912, integrated freeRTOS to handle scheduling, and implemented interrupts (enabling it for the chip and writing ISRs) to handle user input, among other functions

Moderator, Humans vs. Zombies **(University of Waterloo 2016)**
Organized and ran a week-long on-campus game with over 200 students

Hack the North 2015 Volunteer **(University of Waterloo 2015)**
Advised participants on PCB design and rapid prototyping

Tech Crew, Engineering Play (Engplay) **(University of Waterloo 2015 - 2016)**
Coordinated audio/visual equipment set-up and use

Shad Valley **(University of New Brunswick 2013)**
Created a business plan to solve a problem related to human-powered commuting