ALEXANDER VAN KRALINGEN

MECHATRONICS ENGINEERING STUDENT

CONTACT

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https://github.com/vankraa/Portfolio

PROFILE

- Mature, self-motivated undergraduate student
- A 3.7 GPA is a testament to my work ethic and enthusiasm for the engineering industry
- Strong interest in STEM subjects, teaching, and learning
- Hobbies include programming, learning more about new research and technology as well as maintaining an active lifestyle

TECHNICAL SKILLS

- C/C++, PYTHON, MATLAB, BASH, LINUX UI, SQL, JAVA, ELM, AUTODESK, MICROSOFT OFFICE, NI MULTISIM & LABVIEW
- HAND TOOLS, ELECTRICAL INSTRUMENTS (OSCILLISCOPE, MULTIMETER, ETC.)

EDUCATION

Mechatronics Engineering Co-op (B.Eng.)

2018 – 2022

Faculty of Engineering: Engineering Co-op, McMaster University, Hamilton, Ontario

Mechanical Techniques Certificate (Electrical Monitoring and Systems)

2013

Skilled Trades Program: Electrician, Mohawk College, Stony Creek, Ontario

EXPERIENCE

McMaster Certified Tutor

Tutor Ocean - Hamilton, ON

2018 – Present

Tutor for various undergraduate courses:

- Linear Algebra
- Computer Science Practice and Experience: Basic Concepts
- Waves, Electricity and Magnetic Fields
- Engineering Mathematics II, III, IV
- Engineering Computation

Computer Science Practice and Experience: Basic Concepts (COMPSI 1XA3)

Title: App Development with Server Communication

Winter 2019

- Created gameplay moments, including: collision detection, zombie army lists, an upgrade system and various game states using Elm
- Initialization of a server using Django's python web framework
- Authenticated user with login information to save game progress to the server
- Game upgrade information and scores saved in SQL tables on the server to be called upon request and ranked against other players

RELEVANT COURSES

- **Programming for Mechatronics:** C/C++ data structures and memory management
- **Data Structures, Algorithms and Language Concepts:** advanced programming with an emphasis on embedded systems.
- **Computer Science Practice & Experience:** simple app development with server communication.
- **Dynamic Models and Control of Physical Systems:** control theory, stability analysis and feedback controller design.
- **Analog and Digital Circuits:** circuit component analysis, Boolean logic and digital circuit design.
- **Electrical Circuits and Power:** transformers, motors, single and 3-phase power circuits and induction motors.
- **Sustainability and Ethics:** economic, environmental and social responsibility of engineers

Communication Skills (COMPSCI 3I03)

Title: App Design and Business Proposal with Technical Report

Fall 2019

• Designed a mobile application for McMaster's co-op and career portal OSCAR Plus

• Used www.figma.com to create a working visual demo of the application

• Worked with three team members to develop a business model and create a technical report of the back-end and framework of the application for future development

Personal Project

Title: Raspberry Pi Garage Door Opener

Spring 2019

• Used a Raspberry Pi and Relay to create a WiFi garage door opener

• Programmed the Raspberry Pi by following an online tutorial primarily using Bash to control the opener

• Set up a miniature server to communicate with the Raspberry Pi remotely

Kindergarten English Teacher

Jiangdong International Preschool - Ningbo, China

2016 – 2017

• Developed lessons for first time English language learners

• Helped children aged 2-6 develop an interest in both education and learning a new language through various methods i.e. audiovisual learning, activities, puzzles, and crafts

• Managed a classroom of 18-20 students while ensuring that each student maintains an understanding of the material presented in the day's lesson

Private Tutor

Hamilton, ON & St. Catharines, ON

2010 – 2016

• Tutored English, sciences and mathematics for all levels

• Exchanged skills with the student, i.e. help with improving English conversation skills, immediate problem solving, and identifying areas that require more attention to make learning and understanding of concepts easier

Mold Cell Operator

Niagara Piston - Beamsville, ON

2015 – 2016

• Operated a series of machines in tandem including: hydraulic press, electromagnetic oven, hot mold press and cutting tool.

• Ensured proper temperatures/specifications for all machines in the cell and making adjustments when needed

• Performed quality control inspection of the products after each cycle

• Provided mechanical maintenance on machines as needed