Adam Schonewille

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Skills

Programming Languages MATLAB, C / C++, LaTeX, GNU Octave, G-code, VHDL, LabVIEW, Julia, Java
Data Science Git, Qt, Programming API in Linux & Windows, Computer vision with OpenCV, Godot, ML & NN
Simulation Simulink, Ansys, COMSOL
Electrical PCB Soldering, Power electronics, Servo drivers & Motor control, PID Control, Instrument amplification design, Signal Filtering
Mechanical Structural analysis, Technical CAD drawings, Thermal insulation design, Pump specifications, Fluid dynamics
CAD Software SolidWorks, Autodesk Inventor, Onshape
Prototyping SLA & FDM 3D Printing, Lathe, Milling machine, Laser cutter, Water jet cutter, Sheet metal brake, Power tools & Hand tools

Education

University of Toronto *Toronto, ON, Canada*
MASc, Mechanical and Industrial Engineering, *with Emphasis on Robotics and Mechatronics* *Sept. 2018 - March 2022*

University of British Columbia *Vancouver, BC, Canada*
BASc, Engineering Physics, *with Mechanical Engineering Specialization* *Sept. 2013 - May 2018*

Aldergrove Community Secondary School *Aldergrove, BC, Canada*
BC Certificate of Graduation (Dogwood Diploma), *Valedictorian, Governor General's Award* *Sept. 2008 - June 2013*

Research & Work Experience

University of Toronto *Toronto, ON, Canada*
Master's Research Student / Technical Communication TA *Sept. 2018 – March. 2022*

Under the supervision of Dr. Eric Diller, developed a clinical magnetic actuation system responsible for wirelessly controlling robotic microsurgical tools targeting minimally-invasive neurosurgery. Significantly increased the accessibility the surgeon has to the patient.

Technical Expertise: This project required simulating the physics in MATLAB and COMSOL, optimizing the layout of actuators in MATLAB, designing the structure of the system in SolidWorks, machining components on a lathe and milling machine, prototyping assembly jigs, designing high voltage AC and DC power circuitry, amplification and filtering of control signals, GUI and API programming in C++ to allow the user to input commands, and calibrations and modelling to validate the performance of the system.

Dronelogics Systems Ltd. / Candrone *Burnaby, BC, Canada*
Robotics Engineer / Drone Technician *June 2018 – Aug. 2018*

Worked in a fast-paced, small start-up environment with < 10 employees. Built upon two car-mounted robotic arms which controlled a camera gimbal for filming car chase style shots in movies and commercials.

Project Co-leader: modified and optimized code, improved electrical components, and converted the system from wired to wireless communication. Aided in design of the user's joystick with scalable manufacturing in mind.

NORAM Engineering and Constructors Ltd. – Electrochemical Group *Vancouver, BC, Canada*
Mechanical Engineer Co-op *May 2017 – Aug. 2017*

Mechanical Design: Worked within the Electrochemical group gaining practical experience in mechanical design, electrochemical processes, SolidWorks modeling, prototyping, piping, structural mechanics, fluid dynamics, and heat transfer.

Commercial Production: Helped to design and build the infrastructure necessary for assembly production of commercial cells to build a commercial plant. Contributed substantial work to multi-million dollar projects.

Documentation: Wrote reports for clients, documented prototype progress, and kept a detailed logbook of research experiments.

About Me

Hobbies and Interests Bouldering, Hiking, Soccer, Lacrosse, Biking, Snowboarding, 3D Printing, Game Development, Art