

ADAM DUNN

ELECTRICAL ENGINEER, BEng, E.I.T.

48 Nottingham Cres, Brampton, ON L6S 4G4
(416) 803-7202 dunn.adam9@gmail.com
<https://www.linkedin.com/in/adam-dunn-175a3a87>

EDUCATION

Bachelor of Engineering Science (BEng) - Electrical Engineering Western University

2014 - 2019
London ON

Dean's Honour List - 3.7 Cumulative GPA

Relevant Courses: Power Systems II, Predictive and Adaptive Algorithms, Controls Systems, Power Electronics

International Baccalaureate (IB) Diploma – Ontario Scholar Turner Fenton Secondary School

2010 - 2014
Brampton ON

SKILLS

Web Development: JavaScript, HTML

Programming Languages: C++, Java, Python, Visual Basic

Tools/IDE: MATLAB, Visual Studio Code, Github, JVM

PCB Design: CIRCAD, Soldering

Power Simulation: PowerWorld, CYME, ETAP

Circuit Simulation: PSIM, MicroCap

Digital Logic Design: Quartus FPGA

Media/Presentation: Adobe Photoshop, Adobe After Effects, Sony Vegas Pro, Final Cut Pro

WORK EXPERIENCE

Electrical Engineering Intern – Distribution and Asset Sustainment Hydro One

May 2017 – August 2018
Toronto ON

Maintenance Planning and Script Design

- Managed preventative maintenance plans for Distribution assets across Ontario
- Created a C++ script to automate maintenance plans on SAP database
- Script saves operators +260 working hours per year

Padmount Transformer Replacement Project

- Created Algorithm in C++ to geographically group Assets based on proximity and age
- Used GoogleMaps and GoogleEarth API to map real-time assets in Ontario
- Worked in an agile project environment with data-driven development

Asset Analytics – Transformers Survival Rate

- Investigated the expected age of failure for transformers using field asset data
- Used survival rates to calculate an effective age of transformers that account for other risk factors
- Incorporated results into Asset Analytics software to assess the risk factor of failure of active transformers

Connection Impact Assessments

- Documented new customer connection information for expansions on the grid
- Conducted load flow analysis to monitor the impact on system
- Used CYME simulating software to model regions and conduct area studies

Logistics and Sustaining Engineering Summer Student MDA Robotics and Automation

May – August 2016/2015/2014
Brampton ON

Trend Based, Holistic Observation, Manipulation & Analysis GUI <https://github.com/iiDuNoo/Trending-GUI>

- Developed a program in Matlab to plot data from different components of the CanadArm-2 (SSRMS) and Dextre (SPDM) on the International Space Station to assess changes in current, torque and position.
- Used Regression and ANOVA Simulink toolbox for modeling linear and nonlinear correlations in data

Redcat Linux System Scripts <https://github.com/iiDuNoo/Grid-Metrics-Script>

- Created a Python script for SSRMS that would return system statistics associated with the Red Hat Grid-engine
- Gained experience in Linux OS, parsing and bash commands
- Included statistics such as node usage and time in queue

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PROJECT PORTFOLIO

Capstone CubeSat VR Satellite - Power System Team

2018 – 2019

Western University received a grant to design and build a 2U CubeSat to take VR footage in orbit. The power systems team was tasked with modelling the power load and demand profile under various operational modes and orbit patterns. Designed the electrical power system included selecting optimal components such as solar panels, battery and power distribution module. This was a multidisciplinary project and required collaboration with other subsystems/disciplines.

<https://github.com/iiDuNoo/CubeSat-Power-System>

Power Factor Correction Project

2019

This project addressed the need for power factor correction in a DC power supply while minimizing distortion in the source current. The solution implements a 12-pulse diode bridge boost converter which lowers the total harmonic distortion to within the IEEE 5% guideline while also reducing the frequency and magnitude of low order harmonics.

Automatic Shower Microcontroller Design

2017

The embedded design of an automated shower head personalized the temperature and pressure settings for up to four saved individuals. The design required the use of motor control, keypad interface for inputting pressure and temperature as well as assembly level programming on a HC12 microcontroller.

CERTIFICATIONS, COMPETENCIES and TRAINING

- **Engineer-in-Training, Ontario Professional Engineers** -12 of 48 months completed (through Co-op)
- Electrical Safety Training - Hydro One (2017-2018)
- Proficient in English. Knowledgeable in conversational French (obtained in Extended French studies).
- Full G Driver's License (Ontario)

VOLUNTEER and EXTRACURRICULAR ACTIVITIES

Western University

2014 - 2019

Baja SAE – All-Terrain Vehicle – Modeling Team (2015-2016)

A group of undergraduate engineering students built a vehicle from scratch for testing on varying tracks. All cars are required to meet engine and size specifications. The modeling team was responsible for the appearance and design of the vehicle and used Solid Works CAD software to create 3D models of the car throughout the design process.

Hackathon Contestant (November 2015)

A student-run, 36-hour event where Canadian students gather to create and innovate. Contestants build a mobile app, hardware project, web application or some combination of all three. Using Swift I built a mobile app for Apple devices to hold digital copies of important documents for refugees entering a new country.

Investment Club, Intramural Sports (Hockey, Basketball, Water Polo), Assisted at Open House for prospect co-op students.

Turner Fenton Secondary School

2010 - 2014

Intramural Ball Hockey, Ice Hockey, Basketball - Player, time and scorekeeping.

IB Program Volunteer - Mentorship Conference Audio/Video Executive, START Conference Security Executive, Culture Fest Audio/Visual Head.

Participated in WW II Europe tour and took part in the 95th anniversary ceremony of the battle of Vimy Ridge.

Competitive Representative Sports

2005 - 2013

Goalie on Brampton Youth Hockey Association (BYHA) and Brampton Minor Box Lacrosse (BMLA) teams for 9 years.

Goalie Assistant, Mentor and Event Assistant

2010 - 2012

Assisted at Orientation Clinics for new/prospective lacrosse players. Demonstrated goalie skills, helped run drills and provided instruction at development sessions and skills camp. Performed time/score-keeping duties at tournaments.

Aided in the early development of ice hockey goalies. Enhanced player learning and love of sport through 1on1 instruction and fun games. Coordinated on-ice warm-ups, goalie drills, and off-ice training for young players at goaltending camps.