Engineering Analyst

Hard-working, innovative professional with a strong background in aerospace engineering and significant experience in engineering data analysis of building energy use. Takes initiative to research and build upon the foundation of data driven organizations and works collaboratively in advancing projects. Skilled in performing statistical analysis, writing technical reports, providing technical support, and clearly communicating results to senior management. Offers a strong track record of software scripting in Python to perform engineering analysis. Proficient in MS Office, MATLAB, SQL, EE4, CanQUEST, eQUEST, EnergyPlus, Pro/Engineer, Abaqus Standard, and ANSYS Workbench. Additional core competencies include:

Results Oriented • Adaptable • Creative Thinker • Interpersonal and Team-building

Networking and Partnering • Organizational Awareness • Self-motivating

Continuous Professional Learning

# Career Highlights

* Developed an engineering metric to rate the energy efficiency of building designs as a significant component to a technical consultation with industry
* Significantly advanced the analytical rigor of the division’s technical impact methodology
* Secured long-term ongoing funding for the division through well founded program financial and impact forecasts
* Communicated the potential of Greening Government Operations to top senior officials

# Professional Experience

Senior Analyst 2012 – 2016

Natural Resources Canada, Office of Energy Efficiency, Buildings Division Ottawa, ON

* Wrote Python scripts to interface with engineering simulation software, and to create and organize large data sets for statistical regression analysis
* Created detailed economic models of government programs to quantify and forecast impacts on the economy, energy use, and GHG emissions
* Shared data and perspectives through collaboration with counterparts from other divisions
* Conducted technical and policy research in support of program development

Sole Proprietor 2013 – 2016

Adrien Gravelle Ottawa, ON

* Wrote proposals to secure government contracts based on time and resource constraints
* Defined scope of projects, deliverable milestones and tasks, and stayed on schedule

# Education

M.A.Sc., Aerospace Engineering 2012

Carleton University Ottawa, ON

B.Eng., Aerospace Engineering 2008

Carleton University Ottawa, ON

# Academic Projects

Machine Learning 2012

Course provided by Stanford University through Coursera Inc. Online

* Studied supervised and unsupervised machine learning techniques
* Wrote a custom Optical Character Recognition algorithm in MATLAB

Thesis: Boundary Element Analysis of Stress Concentrations in Bicrystals 2009 – 2011

Carleton University Ottawa, ON

* Analyzed stress concentrations at the interface of anisotropic materials in various geometrical configurations, under static loading using numerical methods
* Wrote a Python script to aid with data organization and analysis
* Successfully defended thesis to a panel of experts

Finite Element Analysis of Bicycle Frame 2010

Carleton University Ottawa, ON

* Performed linear elastic analysis of a bicycle frame using ANSYS Mechanical
* Determined points of maximum stress concentration for various static loading scenarios

Formula SAE (FSAE) Race Car 2007 – 2008

Carleton University Ottawa, ON

* Designed the bodywork of the race car through a collaborative and iterative process while:
  + co-ordinating interfaces with other team members,
  + analyzing the airflow around the race car using ANSYS CFX,
  + and minimizing weight and aerodynamic drag
* Co-ordinated volunteers to help construct the bodywork out of composite materials
* Developed a cost estimate to manufacture the car body for small scale production

# Awards and Achievements

Office of Energy Efficiency Instant Award 2014

Departmental Scholarship 2009 & 2010

Graduated with Distinction 2008

Clarence C. Gibson Scholarship 2005

Deans' Honour List 2005

President's Scholarship 2004

R.J. McCarthy Scholarship Award 2004

# Personal Interests

**Academic:** mathematics, astrophysics, cosmology, and quantum mechanics

**Sports:** running, bicycling, hiking, canoeing, and skiing

**Computers:** custom building computers and staying current with available hardware

**Other:** space exploration, camping, environmental sustainability, and economics