

Willem Klumpenhower

Department of Civil Engineering
University of Calgary
2500 University Drive NW
Calgary, AB T2N 1N4

September 11, 2015
willem.klumpenhower@ucalgary.ca
klumpentown.com

Education

- **University of Calgary** Calgary, AB
M.Sc. Civil Engineering - Transportation Engineering 2014-Present
 - Supervised by S.C. Wirasinghe.
 - (*In Progress*) Optimal Schedule Design for a Transit Route with Intermediate Time Points.
- **University of Guelph** Guelph, ON
B.Sc. Honours Theoretical Physics 2009-2013
 - Graduated *With Distinction*, Dean's Honours List.
 - Research project with Dr. Vladimir Ladizhansky developing software to automate analysis of NMR data.
- **Western Canada High School** Calgary, AB
High School Diploma 2005 - 2008
 - Lifetime Honours Society member.
 - Two semesters of computer science (C++ and Java).

Teaching Experience

- **Pythonic Research: Making Data Easier With Python** University of Calgary
Workshop Instructor Spring 2015
 - Taught a full-day Python workshop for academics wishing to explore data visualization and processing techniques offered by Python.
 - Examples and demonstrations included GPS visualization, solving numerical equations, working with probability distributions, object oriented programming, and CSV data reading and manipulation.
- **Risk and Safety in Civil Engineering (ENCI 504)** University of Calgary
Teaching Assistant Winter 2015
 - Marked assignments, taught labs, held office hours

Professional Experience

- **Canadian Pacific** Calgary, AB
Rail Traffic Controller December 2013 - April 2014
 - Planned, managed and executed the safety-critical and efficient movement of trains on the railway.
 - Effectively communicated complex information via radio and telephone.
 - Worked under pressure and a constantly changing situation to minimize train delays with effective planning, as well of scheduling of railway personnel.

- Maintained an ongoing awareness of the operation of the railway, including equipment and signals, car handling, operating manuals, computer applications, and collective agreements.
- Qualified in the Canadian Rail Operating Rules. (99% on exam)

- **Cold Mountain Computing**

Yellowknife, NT

Level 2 Programmer

May 2013 - October 2013

- Developed ASP.NET and VB.NET powered web applications for clients.
- Developed and administered Microsoft SQL databases.
- Planning and design of process analysis and application development.

- **University of Guelph Physics Department**

Guelph, ON

APXS Group Undergraduate Research Assistant

May 2011 - April 2013

- Full-time May-Aug 2011 and 2012, part-time during 4 semesters of study Sept-April 2011-13
- Worked with APXS Operations Lead Nick Boyd, and Dr. Ralf Gellert, principal investigator of the APXS instrument which is currently on board the Mars Science Laboratory *Curiosity*, and Mars Exploration Rover *Opportunity*.
- Provided an IT support role for group users, including setting up and configuring hardware for use in the custom network environment as well as for use of in-house developed software.
- Installed, configured, and administrated an OpenVPN server for 20 users, including remote users.
- Constructed website and digital signage display for group's project.
- Co-designed and implemented a MySQL database for storage and analysis of scientific calibration data.
- Co-developed, wrote, and implemented custom PyQt4 software for use by team members to view and analyze raw data from Mars, and interact with scientific SQL database listed above.
- Co-developed a Python Bottle based web interface for data analysis of raw data from Mars.

- **SMART Technologies**

Calgary, AB

Personal Computing Technician

May 2010 - July 2010

- Worked with the Deskside Support team for the Information Systems department.
- Responded to ticket escalation from technical support by providing software and hardware troubleshooting to company employees.
- Performed hands-on fixes at the desktop level.
- Installed, configured, and deployed new computer hardware using imaging technology.
- Facilitated, managed, and performed the bulk of the migration of software development computers to Windows 7.
- Created various educational documents, including a Macintosh tutorial on basic use, intended for deployment with company Macs.

- **University of Calgary MicroStore**

Calgary, AB

Sales Associate

August 2008 - January 2009

- Was responsible for the sale of computers and peripherals.
- Prepared custom orders and provided technical advice.
- Provided hardware and software troubleshooting.

- **Keg Steakhouse and Bar**

Calgary, AB

Line Cook

July 2008 - November 2014

- On-and-off during the course of studies.
- Prepared and cooked appetizers and main dishes.
- Worked under pressure, and learned time management and food safety skills.

- Won “Best First-On Appetizer Cook” for the region, 2008.

- **Staples Business Depot**

Calgary, AB

- *Sales Associate*

April 2007 - January 2008

- Sales of furniture, computers, and computer peripherals.
- Interacting with customers, some training in computer hardware.
- Employee of the Month - August 2007.

Contracts and Projects

- **Cenera**

Calgary, AB

- *Bow Valley Information Governance Project*

Fall 2014

- Planned Microsoft SQL Database to inform management of information governance.
- Attended project meetings.

- **Yellowknives Dene First Nations**

Yellowknife, NT

- *IT Assessment Contract*

Summer 2013

- Investigated information technology needs for the Yellowknives Dene First Nations Administration.
- Prepared technical section of a Request for Tender for a complete overhaul of information technology infrastructure.

- **Cenera**

Calgary, AB

- *Researcher*

Fall 2005

- Compiled and analyzed marketing information for client management systems.

Academic Contributions

Committees and Organizations

- **2015 4UniC Conference**, *Communications Director, Master of Ceremonies*
- **Institute for Transportation Engineers Student Chapter**, *Member since 2014*
- **Department of Physics Undergraduate Curriculum Planning Committee**, *Student Representative, 2010-2013*
- **University of Guelph Physics Club**, *President, 2010-2011*

Conference Proceedings

- W. Klumpenhouwer and S.C. Wirasinghe. An algorithm for using real-time information to improve inter-time-point bus movement. 2015. *CSCE 2015 Annual Conference*.

Unpublished Papers

- W. Klumpenhouwer and S.C. Wirasinghe. Cost-of-crowding model for light rail train and platform length. 2015. Submitted to *Public Transport* June 6, 2015.
- W. Klumpenhouwer, A.G de Barros, and S.C. Wirasinghe. Crowding and passenger flow effects on optimal departure lounge configuration. 2015. Abstract accepted to *WCTR 2016*.

- W. Klumpenhouwer and V. Ladizhansky. Automating protein assignment with multi-dimensional nuclear magnetic resonance spectra. 2013. University of Guelph final research project.

Awards

Queen Elizabeth II Graduate Scholarship (Master's)	2015
University of Guelph Entrance Scholarship	2009
Keith Yu Memorial Scholarship in Computer Studies	2008
Alexander Rutherford Scholarship	2008

Volunteer and Extracurricular Activities

- **Loose Moose Theatre Company** Calgary, AB
Volunteer *October 2014 - Present*
 - Volunteered for Calgary's original improvisational theatre.
 - Worked in the box office and concession, and as an usher
 - Attended company improvisation classes.
 - Performed scenography; assisting with improvised set and costume changes.
- **Black Footed Ferret Monitoring Program** Grasslands National Park, SK
Volunteer Tracker *August 2013*
 - Spent two nights monitoring Black Footed Ferret populations.
 - Learned about animal conservation efforts in Grasslands National Park.
 - Operated Parks Canada equipment.
- **Theatre on the Edge** Waterloo, ON
Improvise *August 2011 - April 2013*
 - Member of Theatre on the Edge improvisational troupe.
 - Performed and participated in weekly improvised theatre.
 - Taught and attended weekly workshops.