Calvin Wylie | Curriculum Vitae

(607) 262-6730 • calvin.wylie@gmail.com
people.orie.cornell.edu/cjw278

Education

Cornell University
Ph.D. in Operations Research *December 2019*

Cornell University
Master of Science in Operations Research *May 2018*

University of British Columbia
Bachelor of Science (Honours) in Mathematics *May 2011*
Minor in Economics

Technical Skills

Programming, Software, & Tools:

- Python, Julia, Java, Matlab, C, Erlang, Actionscript, Haxe. Experienced in both object-oriented and functional programming paradigms.
- Optimization software: AMPL, Gurobi, JuMP, CVX.
- Agile developement, Git version control, Jupyter notebook.

Graduate Coursework:

- Convex, linear, nonlinear, robust, and stochastic optimization.
- Statistics, data science, and machine learning theory.
- Scientific and parallel computing.
- Stochastic processes, simulation, and probability.

Academic

Dissertation: *Partly Smooth Models and Algorithms*

My research interests span optimization theory and algorithms (in particular nonlinear and nonsmooth optimization), and applications in operations research and data science.

Journal Papers and Preprints

- Adrian S. Lewis, Calvin J.S. Wylie. "A Simple Newton Method for Local Nonsmooth Optimization", 2019. *arXiv: arxiv.org/abs/1907.11742*
- Adrian S. Lewis, Calvin J.S. Wylie. "Active-set Newton methods and partial smoothness", in revision for *Mathematics of Operations Research*, 2019. *arXiv: arxiv.org/abs/1902.00724*

- Heinz H. Bauschke, Xianfu Wang, and Calvin J.S. Wylie. "Fixed Points of Averages of Resolvents: Geometry and Algorithms", *SIAM Journal on Optimization*, 2012.

Presentations

- "Partly Smooth Models and Algorithms", ORIE Young Researchers Workshop, Cornell University, October 2019.
- "Partial Smoothness and Fast Local Algorithms", International Conference on Continuous Optimization, Technical University of Berlin, August 2019.
- Poster: "Exploiting Smooth Substructure in Nonsmooth Optimization", ORIE Young Researchers Workshop, Cornell University, October 2017.
- "A Projection Method for Convex Feasibility Problems with no Solution", Mathematics Department Seminar, UBC Okanagan, November 2010.
- "A Projection Method for Solving Linear Systems", Canadian Undergraduate Mathematics Conference, University of Waterloo, July 2010.

Professional

Software Engineer **Kelowna, British Columbia**
TVeon Inc. *June 2013 to August 2014*
Part of a small team working on a cloud-based platform for delivery, storage, and encoding of live and on-demand video.

- Responsible for the design and implementation of a real time control and monitoring system.
- Prototyped streaming software and players for varied devices.

Software Engineer **Kelowna, British Columbia**
Transmedio Inc. *May 2011 to June 2013*
Software engineering services company consulting with various startups in the gaming/multimedia space. Involved in all aspects of development including meeting with and presenting to investors.

- Developed a web browser based 3D graphics platform, including rendering and animation engine, and asset pipeline.
- Prototyped software for collaborative real-time game development (now KinematicSoup Technologies).
- Designed and implemented protocol and server for remote streaming of physics simulation data to game clients.

Teaching

Instructor **Cornell University**
Optimization II *Summer 2016*
Third-year undergraduate course in modeling, analysis, and algorithms for network flow optimization, dynamic programming, integer programming, and nonlinear optimization.

Teaching Assistant **Cornell University**
Mathematical Programming I *Fall 2016 and 2017*
PhD level course in optimization, included preparing and giving weekly supplementary lectures on various topics.

Teaching Assistant **Cornell University**
Optimization I and II *Fall 2014 to Spring 2019*
Information Systems and Analysis
Optimization Modeling in Finance
Financial Engineering
Various recitation lecture, grading, and office hour duties.

Teaching Assistant **University of British Columbia**
Calculus I and II *Fall 2010 to Spring 2011*
Weekly tutorials for first-year calculus students.