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RESEARCH INTERESTS Mathematical modelling, numerical analysis, and high-performance computing.

EDUCATION PhD in Applied Mathematics, **University of Alberta**, 2011

- *Multispectral Reduction of Two-Dimensional Turbulence*
- Adviser: John C. Bowman

MSc in Applied Mathematics, **University of Alberta**, 2006

- *A Multi-Spectral Decimation Scheme for Turbulence Simulations*
- Adviser: John C. Bowman

BSc, Honors Applied Mathematics, **University of Alberta**, 2001

WORK HISTORY Postdoctoral Researcher, **IRMA** (Institut de Recherche Mathématique Avancée), Université de Strasbourg, France, since 2014.

- Member of the TONUS project for numerical simulation in Tokamaks.
- Developed a OpenCL/GPU-based Discontinuous Galerkin solver for numerical solution of the Vlasov equation.

Postdoctoral Researcher, **Laboratoire de Mécanique, Modélisation et Procédés Propres**, Aix-Marseille University, France, 2012 to 2014.

- Designed software for simulating magneto-hydrodynamic turbulence in a grid computing environment using spectral methods and penalisation.
- Aided in the supervision of PhD students.

Sessional Lecturer, **University of Alberta**, Canada, 2010.

- Lectured engineering differential equations.
- Design and deliver lectures and exams in a team-teaching environment.

Graduate Student, **University of Alberta**, Canada, 2003 to 2011.

- Develop a coherent research program in applied mathematics.
- Implement ideas and verify results.
- Write papers and present results at international conferences.
- Teach undergraduate math labs and help sessions.

English Teacher, Private Academy, South Korea, 2003 to 2004.

- Teach English as a second language in an after-school program.

Summer Undergraduate Researcher, **University of Alberta**, Canada,

1998 to 2000.

VOLUNTEERING Thousand Faces Performance Art Festival
& COMMITTEES • President of the Board 2011 to 2013

PIMS Mathematical and Statistical Graduate Education Round table

- Brought together faculty, students, and administration from seven universities.
- Resulted in new policies and programs being implemented.

Canadian Young Researchers Conference in Mathematics and Statistics

- Organising Committee (2006, 2008, 2010)

Volunteer Mechanic/Instructor, Edmonton Bicycle Commuter's Association, 2009 to 2013, Collectif Vélos en Ville, 2012 to 2013

University of Alberta Math and Stat Grad Association

- President 2005 to 2006, Treasurer 2006 to 2007

University of Alberta Math Fair and Math Outreach, 2004 to 2011

TECHNICAL Project management and public speaking.
SKILLS

ASDF Computer skills:

- Programming languages: C/C++, OpenCL, Python, R, and FORTRAN.
- Parallelism: OpenMP, MPI, and OpenCL (for GPUs).
- Environments:
 - Linux, Windows, and Mac operating systems.
 - National-level grid computing environments.
- Data analysis and presentation: Asymptote, L^AT_EX, ParaView, HDF5, g_{ms}h.
- Version control: git, Mercurial, svn.