

# Yufang Hao

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1605 - 50 Lombard Street, Toronto, ON  
Citizenship: CANADIAN

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## SUMMARY OF QUALIFICATIONS

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- Superior analytical skill and research ability
- Proficient in object-oriented programming with Java and C++
- Experienced in mathematical and statistical software, including MATLAB and SAS
- Outstanding mathematical background in advanced calculus, numerical analysis, numerical methods for ordinary and partial differential equations, elementary statistics, regression analysis, information theory, time-frequency analysis, Fourier analysis and wavelets
- Excellent presentation and communication skills
- SAS Certified Base Programmer for SAS 9 (Exam grade: 68/70)

## EDUCATION

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**Doctor of Philosophy in Applied Mathematics** (09/2005 - 09/2011) University of Waterloo

- Received the highest national graduate scholarship in Canada (i.e. NSERC CGS-D)
- Cumulative GPA: 92.4%
- Visiting student at the University of Maryland, U.S.A. (03-04/2009)

**Bachelor of Mathematics** (09/2001 - 04/2005) University of Waterloo

- Honours Double Major in both Pure Mathematics and Applied Mathematics
- Graduated with Distinction, Dean's Honours List
- Cumulative GPA: 92.5%

## WORK EXPERIENCE

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**Research Assistant (Ph.D.)** (09/2005-08/2011) University of Waterloo

- Developed an innovative sampling theory, linking continuous signals and their discrete samples, implemented a corresponding algorithm for filtering, sampling and reconstructing signals at an adaptive non-constant sampling rate
- Analyzed the statistical correlation of discrete samples to optimize the set of points for the efficient and stable reconstruction of signals
- Published 2 journal papers and 3 referred conference proceedings, 2 more journal papers currently under revision
- Delivered 30-minute oral presentations in 5 international, 4 national research conferences, and one-hour research seminars at 3 different universities as a guest speaker

**Course Instructor** University of Waterloo

- Math 225 Applied Linear Algebra 2 (class size of 28, 01-04/2011)
- Math 237 Calculus 3 (class size of 74, 09-12/2008)
- Designed and delivered 3 hours of lectures per week
- In the final course evaluation of Math 237, ranked excellent by 33% and ranked good by 53% of students in overall effectiveness as an instructor

## Teaching Assistant

University of Waterloo

- Graded assignments and exams, assisted students during office hours, taught tutorials
  - AM231 - Calculus 4 (09-12/2010)
  - AM731 - Functional Analysis (*graduate-level course, 09-12/2006, 09-12/2007*)
  - AM391 - From Fourier to Wavelets (01-04/2007)
  - AM342 - Computational Methods for Differential Equations (09-12/2005)

## Summer Research Assistant

University of Waterloo

- Computationally simulated the probability distribution of vacuum quantum fluctuations in a cosmological model and compared to observed data (05-08/2005)
- Analyzed the stochastic modeling of charge state of particles in carbon nanotubes including numerical calculation of the model in MATLAB (05-08/2004)

## Software Developer (Intern) (09-12/2002)

Math Group, R&D, Waterloo Maple Inc.

- Independently developed Java-Applet-like tutorial Maplets for Maple's Student-Calculus and Linear Algebra packages. These tutorial Maplets have become the key feature and selling point of Maple's new software release.

## Application Engineer (Intern) (01-04/2002)

Application Team, Marketing, Waterloo Maple Inc.

- Maintained the database of Maple Application Center using SQL.
- Programmed various Maple applications for demonstration purposes, ranging from algebraic enumeration to complicated models of mechanical systems.
- Created the first generation of Calculus Maplet tutorials, which has become Maple's most popular downloaded application online. As a consequence, the company later merged these Maplet tutorials into Maple's main software production.

## AWARDS AND SCHOLARSHIPS

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- Ontario Graduate Scholarship in Science and Technology (2010)
- Canada Graduate Scholarship - Doctoral (NSERC CGS D) (2006-2009)
  - The highest national scholarship at the Ph.D. level in Canada, administered by the National Sciences and Engineering Research Council of Canada (NSERC)
- Canadian Graduate Scholarship - Master (NSERC CGS M) (2005-2006)
  - The highest national scholarship at the Masters level in Canada
- NSERC CGS Foreign Study Supplements (2009)
  - Only two students at the University of Waterloo received this award in 2009
- UW President's Graduate Scholarship (2005-2009)
  - The highest graduate scholarship at the University of Waterloo (UW)
- UW Mathematics Foundation Scholarship (2001-2005)
  - The second highest undergraduate scholarship in the Faculty of Mathematics at UW
- 2001 National Descartes Math Contest Golden Medal
  - Achieved first place and the only perfect score in this Canadian high school math contest
- Fourth Canadian Open Mathematics Challenge Golden Medal (Top 4 Winners in Canada)

## COMPUTER PROFICIENCIES

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Windows/Mac OS/Unix platforms, Java, C++, SQL, HTML, MATLAB, SAS, Microsoft Excel, FrontPage, MathML, Maple, Latex, Beamer, Apple Final Cut Pro