Jonathan Wayne Lee

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(Canadian citizen)

Education

Stanford University (2005–present)
Stanford, CA U.S.A.
Degree: Ph.D. in Mathematics, expected 2010
Advisor: Gunnar Carlsson
Research Interests: Algebraic topology, particularly homotopy theory and applied computational algebraic topology
Thesis: The equivariant cohomology of upper-triangular square-zero matrices

University of Waterloo (2000–2004)
Waterloo, ON CANADA
Degree: Double Honours B.Math in Pure Mathematics and Computer Science
Honours: Graduated "With Distinction – Dean's Honour List"

Awards and Fellowships

- A.J. Smortchevsky Fellowship (2007–current)
- NSERC Postgraduate Scholarship D3 (2007–2010) — $21,000/year
- NSERC Canada Graduate Scholarship (declined)
- Mike Vangoch Memorial Award (2004, UWaterloo Pure Mathematics Department) — $500
- NSERC Undergraduate Student Research Award (2002, 2003, 2004) — $5,000
- Nortel Networks Undergraduate Scholarship (2000–2004, UWaterloo) — $14,000

Publications

- (with F.-V. Kuhlmann and S. Kuhlmann) "Valuation bases for generalized algebraic series fields", *Journal of Algebra*, **322**, 2009, pp. 1430–1453.
- (with J. Shallit) "Enumerating regular expressions and their languages", *Proc. of Conference on Implementation and Application of Automata*, LNCS **3314**, pp. 2–22.
- (with H. Gruber and J. Shallit) "Enumerating regular expressions and their languages", book chapter in preparation for *Automata: from Mathematics to Applications*.

Teaching Experience

(student evaluations available on website; average rating: 4.3/5.0*)*

Stanford Local ACM Programming Contest
(Autumn 2009, Autumn 2010)

Problem Setter: I wrote problems for Stanford's local computer programming contest, intended to train and select students for higher levels of competition. (When I was a contestant, my team placed 3rd out of 128 teams in regional competition.) By writing algorithmically-oriented problems, I use my mathematics background to push the participants, typically more heavily focussed on computer science, to think harder mathematically.

Math 51 — Linear Algebra and Differential Calculus of Several Variables
(Winter 2010, Autumn 2008, Autumn 2007)

Teaching Assistant: twice a week, I led two hour-long discussion sections, of approximately 20 students each; these were coordinated with larger lecture sections. Other responsibilities included grading examinations and holding 3 office hours a week.

SUMaC — Stanford University Mathematics Camp (Summer 2007, Summer 2008)

Drop-in counselor: I tutored students during independent problem-solving sessions and otherwise provided general assistance during this month-long summer camp for mathematically-inclined high school students.

Math 42 — Calculus (Winter 2007)

Teaching Assistant: as above.

Math 120 — Modern Algebra (Autumn 2006)

Course Assistant: I graded weekly written assignments.

Math 52 — Integral Calculus of Several Variables (Winter 2006)

Course Assistant: I graded written examinations.

Math 113 — Linear Algebra and Matrix Theory (Autumn 2005)

Course Assistant: I held office hours, graded written examinations and wrote model solutions.

Peer tutor — Linear Algebra and Calculus (September 2001–December 2003)

Tutor: for 3 hours a week, I worked in the math faculty's tutorial centre assisting students with first-year core classes.

Other

Computer languages: C, C++, Python, Maple (primary); Java, Ruby on Rails (secondary)
Natural languages: English, Chinese (primary); French, German (secondary)
Music: 20 years of study as highly-accomplished classical pianist; active as soloist and chamber musician
Open source project: I was one of two principal developers behind **We Love ChinesePod** (`http://wlcp.googlecode.com`), a Python script designed to enhance learning from the ChinesePod website by downloading lessons for off-line/mobile usage and reformatting them in a user-customizable format via the combined use of HTML, CSS, XML and XSLT; the user group for this software has over 70 members.