DANIEL PERELMAN

https://homes.cs.washington.edu/~perelman/

perelman@cs.washington.edu

Education

- **University of Washington**—Seattle, WA
  Ph.D. in Computer Science and Engineering

  – Advisors: Dan Grossman and Sumit Gulwani (Microsoft Research)
  – Thesis: *Program Synthesis Without Full Specifications for Novel Applications*
  – Graduated June 2015

- **Cornell University College of Arts & Sciences**—Ithaca, NY
  B.A. in Computer Science and Mathematics

  – GPA: 3.8 (overall), 4.1 (CS major), 4.0 (Math major)
  – Graduated May 2010

Publications

- **Daniel Perelman**, Sumit Gulwani, Dan Grossman, Peter Provost. *Test-Driven Synthesis*, Edinburgh, UK, PLDI 2014.

- Nikolai Tillmann, Judith Bishop, R Nigel Horspool, **Daniel Perelman**, Tao Xie. *Code Hunt: Searching for Secret Code for Fun*, Hyderabad, India, SBST 2014.

- **Daniel Perelman**, Sumit Gulwani, Thomas Ball, Dan Grossman. *Type-Directed Completion of Partial Expressions*, Beijing, China, PLDI 2012.

Research interests

- **Program Synthesis for Data Wrangling**—Microsoft PROSE team
  2015–present

  – Developing technologies to enable non-programmer end-users to get their semi-structured data into machine-usable forms for understanding their data and applying machine learning to it.

- **Automating Grading**—Sumit Gulwani, Judith Bishop, Dan Grossman
  2014–2015

  – Used TDS technology to create hints system for programming game CodeHunt.
  – Continuing to improve technology for applications to feedback for introductory computer science education.

- **Test-Driven Synthesis**—Sumit Gulwani, Dan Grossman
  2012–2015

  – Developed theory and implemention of a general-purpose program synthesis technique inspired by Test Driven Development.

- **Code completion**—Sumit Gulwani, Thomas Ball, Dan Grossman
  2010–2012

  – Developed partial expressions language for API discovery.
  – Implemented Visual Studio plug-in for using partial expressions for API discovery in real projects (`https://pec.codeplex.com/`).

Experience

- **Microsoft**—Redmond, WA
  Research Software Engineer: July 2015–present

  – Worked on PROSE (PROgram Synthesis using Examples) team developing program synthesis algorithms and performing engineering work to productize them.

- **University of Washington**—Seattle, WA
  Research Assistant: September 2010–June 2015

  – Worked on code completion and Test-Driven Synthesis projects described above.

- **Microsoft Research**—Redmond, WA
  Research Intern: June 2013–August 2014

  – Worked on Test Driven Synthesis and Automating Grading projects described above.
  – Scaled up technology to use in Code Hunt educational game using Azure.

- **Microsoft Research**—Redmond, WA
  Research Intern: June 2012–September 2012

  – Developed Test Driven Synthesis project described above.

- **University of Washington Dept. of Computer Science and Engineering**—Seattle, WA
  Teaching Assistant: September 2010–March 2011

  – Graded, held office hours, and taught some lectures for Introduction to Algorithms and Foundations of Computing.

Skills

- **Languages:** C#, Java, Python, Haskell, OCaml, Bash, PHP, Javascript, Scala, C++, C, assembly (x86, ARM, 65c816)
- **Technologies:** Azure, MySQL, PostgreSQL, Django, Apache, IIS, LATEX, Git, Mercurial, Subversion