

Peng Wang

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70 Pacific Street, Apt 262A, Cambridge, MA,
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Education

- PhD Candidate, Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology (MIT)** 09/2012 - present
Advisor: Adam Chlipala
- MS in Computer Science, Tsinghua University**
Major GPA 90.3/100, Overall GPA 90.1/100 08/2010–12/2011
Adviser: Bo Zhang, Fellow of Chinese Academy of Sciences
- BE in Computer Science, Tsinghua University** 08/2006–06/2010
Major GPA 92.5/100, ranking 3/137. Overall GPA 92.1/100, ranking 6/137.

Internship Experience

- Research Intern, Google, Beijing** 12/2010–05/2011
- Designed and experimented with an unsupervised learning algorithm to learn structural object representation from images
- Research Intern, Microsoft Research, Cambridge, UK** 06/2014–08/2014
- Formalized differential algebra and matrix differentiation in Coq
 - Wrote a toolset to translate Coq proofs into Latex
- Research Intern, Microsoft Research, Redmond** 05/2016–08/2016
- Proved correctness and security of a translation from Low* (a subset of F*) to C* (a subset of C)

Laboratory Project Experience

Programming Language and Verification, CSAIL, MIT

Project: Compositional compiler verification

- Designed and verified a compiler from a C-like language Cito to the Bedrock framework
- Supported linking with modules generated by other compilers from other languages
- Supported axiomatically specified ADTs

Project: TiML (Timed ML)

- Designed and implemented TiML, a functional programming language whose type system contains time complexity information

Intelligent Image Laboratory, Tsinghua University

Project: Real-time Road Sign Detection and Recognition System

- Designed the detection algorithm
- Designed the architecture of the system
- Implemented the main framework and the detection part

Project: Learning Visual Features Using Clustering Algorithm

- Implemented the learning algorithm using KMeans

- Designed the Convolutional KMeans algorithm
- Designed the multi-layer deep learning algorithm and the visualization method for higher features

Project: Using Probability Graph to Track Road Signs (Bachelor Thesis)

- Designed a probability graph framework for object tracking
- Proved and implemented the algorithm

Selected Project Experience

- Designed and implemented the *MyLab* numerical computation language
- Implemented a compiler for a small object-oriented language
- Implemented C++ facilities *bind* and *result_of*
- Designed and implemented C++ *member inspecting* library
- Designed and implemented C++ *abstract view* library
- Designed and implemented C++ *lazy view* library
- Designed and implemented *Erl2Cpp* interpreter
- Rewrote *Boost.Foreach* to support iterating on multiple ranges simultaneously
- Implemented a web scraper in *Ruby*, using *mechanize* and *hpricot*

Publications

- **Peng Wang**, Jianmin Li, Bo Zhang. *A Real World Detection System: Combining Color, Shape and Appearance to Enable Real-time Road Sign Detection*. VISAPP 2012
- **Peng Wang**, Santiago Cuellar, Adam Chlipala. *Compiler Verification Meets Cross-Language Linking via Data Abstraction*. OOPSLA 2014

Awards

- National Scholarship, First-Class, 2008
- National Scholarship, First-Class, 2009
- IBM-Tsinghua Scholarship
- Tsinghua-HuangRong Scholarship
- Third Prize of Tsinghua Challenge Cup innovation contest
- Best Student Leader Award of CS Department
- First Prize of National Olympiad of Information (twice)
- Merrill Lynch Fellowship, 2012-2013

Extracurricular Activities

- Volunteer in 2008 Beijing Olympic Games
- Head of Organization Department in the Youth League of CS Department
- Member of the Student Union of Tsinghua University, organizer of three invited speeches for Tsinghua Times Forum