Daniel Suo

Curriculum Vitae

Department of Computer Science
35 Olden Street, Room 318b
Princeton, New Jersey 08540

dsuo@cs.princeton.edu · (617) 930-4239
https://cs.princeton.edu/~dsuo

Research Interests

Real-time systems for problems in robotics and computer vision. Operating systems, distributed systems, co-processors and accelerators.

Education

Sep 2015 – May 2020 Princeton, NJ	**Princeton University**, *Ph.D. Candidate in Computer Science.* Advised by Professor Kai Li
Sep 2006 – May 2010 Cambridge, MA	**Harvard University**, *A.B. in Computer Science.* Secondary Field in Statistics
Sep 2003 – Jun 2006 Lexington, MA	**Lexington High School**, *High School Diploma.* USA Mathematics Olympiad (Top 0.02%). Piano performance (3rd nationally)

Research Experience

July 2017 – Present Berkeley, CA	**Visiting Scholar**. EECS at UC Berkeley, RISELab, Berkeley Artificial Intelligence Research (BAIR) Lab

○ **Berkeley Deep Drive**
Collaboration between RISELab and BAIR to develop deep automotive perception on real-time and distributed systems.

Sep 2015 – Present Princeton, NJ	**Ph.D. Candidate in Computer Science**. Computer Science Department at Princeton University

○ **Brain Imaging Analysis Kit (BrainIAK)**
Collaboration among Intel, the Princeton Neuroscience Institute, and Princeton CS to produce highly-optimized software for advanced brain image analysis. Role: develop distributed deadline-driven system for real-time fMRI studies.

○ **2017 Amazon Alexa Challenge (Team Princeton)**
Challenge to develop a conversational social chatbot. Role: develop real-time processing system to handle chatbot responses for thousands of concurrent conversations.

○ **2016 Amazon Picking Challenge (Team MIT, 3rd Place)**
Challenge to demonstrate fully autonomous systems that pick objects from warehouse shelves. Role: develop ROS infrastructure, design and implement 6D pose annotator.

○ **Mobot**
Autonomous robot for mapping indoor environments. Synchronizing high-resolution cameras over wireless networks, offloading compute to GPU-enabled servers, designing and manufacturing mechanical parts. Built by hand. Code here.

Publications

Neuroscience 2017	**Daniel Suo**, Benjamin J. Hutchinson, Megan deBettencourt, Anne Mennen, Yida Wang, Ted Willke, Nicholas B. Turk-Browne, Kenneth A. Norman, Johnathan D. Cohen, and Kai Li. Real-time fMRI analysis in cloud computing environments. 2017
Under submission	**Daniel Suo**, Michael Suo, and Kai Li. The case for cooperative resource sharing for parallel applications on manycore processors. 2017
Under submission	Ari Seff, Alex Beatson, **Daniel Suo**, and Han Liu. Continual learning in generative adversarial nets. *arXiv preprint arXiv:1705.08395*, 2017

ICRA 2017	Andy Zeng, Kuan-Ting Yu, Shuran Song, **Daniel Suo**, Ed Walker Jr., Alberto Rodriguez, and Jianxiong Xiao. Multi-view self-supervised deep learning for 6d pose estimation in the amazon picking challenge. 2016

Software

cuSIFT	GPU-optimized implementation of SIFT with related 2D and 3D image alignment procedures.
rgbd-annotator	Annotate 6D object poses from RGB-D data.
libdocker	Official Docker SDK in C.
Crypto.jl	Julia cryptography library.
Marvin	Minimalist GPU-only N-dimensional framework for deep convolutional neural networks.

Academic Awards

Feb 2016	2016 Qualcomm Innovation Fellowship Finalist
Sep 2015 – May 2020	Gordon Y. S. Wu Fellowship in Engineering

Academic Service

2016	Reviewer, European Conference on Computer Vision
2016	Reviewer, IEEE Conference on Computer Vision and Pattern Recognition

Teaching

Princeton University

Fall 2016	COS418 Distributed Systems, *Teaching Assistant*, Prof. Mike Freedman
Spring 2017	COS518 Advanced Computer Systems, *Teaching Assistant*, Prof. Mike Freedman
2016 – 2017	Annie Chu '17, *Undergraduate Advisor*, Prof. Kai Li
2015 – 2016	Helen Yu '16, *Undergraduate Advisor*, Prof. Jianxiong Xiao
2015 – 2016	Pallavi Koppol '16, *Undergraduate Advisor*, Prof. Jianxiong Xiao
2015 – 2016	Ed Walker '16, *Undergraduate Advisor*, Prof. Jianxiong Xiao
Spring 2016	Aarav Chavda '17, *Undergraduate Advisor*, Prof. Jianxiong Xiao

Harvard University

Spring 2010	CS171 Data Visualization, *Teaching Assistant*, Prof. Hanspeter Pfister
Spring 2009	CS171 Data Visualization, *Teaching Assistant*, Prof. Hanspeter Pfister

Work Experience

Mar 2013 – Jul 2015	**Floored, Inc.**, *Head of Product, LIDAR and Computer Vision Research*, New York, NY.
Sep 2012 – Mar 2013	**McKinsey & Company**, *Advanced Industries Practice*, Stamford, CT.
Jul 2010 – Aug 2012	**Goldman Sachs & Co**, *Investment Banking Division*, New York, NY.

References

Princeton University Advisor	**Kai Li**, *Department of Computer Science.* Paul M. Wythes '55, P'86 and Marcia R. Wythes P'86 Professor in Computer Science
Princeton University Collaborator	**Johnathan D. Cohen**, *Princeton Neuroscience Institute.* Robert Bendheim and Lynn Bendheim Thoman Professor in Neuroscience. Professor of Psychology, Co-Director Princeton Neuroscience Institute
Intel Corporation Collaborator	**Theodore L. Willke**, *Parallel Computing Lab.* Senior Principal Engineer
Princeton University Supervisor	**Michael J. Freedman**, *Department of Computer Science.* Professor, S∗ Network Systems (SNS) group

Harvard University   **Hanspeter Pfister**, *John A. Paulson School of Engineering and Applied Science.*
Supervisor   An Wang Professor of Computer Science. Director of the Institute for Applied Computational Science