

<b>EDUCATION</b>	<b>Ph.D. in Computer Science</b>	2016 – 2020
	Massachusetts Institute of Technology <i>GPA: 5.0/5.0</i> <i>Advisor: Prof. Daniel Sanchez</i>	
	<b>M.Sc. in Electrical Engineering and Computer Science</b>	2014 – 2016
	Massachusetts Institute of Technology	
	<b>Bachelor of Engineering in Microelectronics</b>	2009 – 2014
	Tsinghua University, China <i>GPA: 94/100</i> <i>Ranking: Top 1</i>	
	<ul style="list-style-type: none"> <li>• Department of Microelectronics and Nanoelectronics</li> <li>• Department of Electronic Engineering</li> <li>• Department of Physics</li> </ul>	2012 – 2014 2011 – 2012 2009 – 2011
	<b>Second Bachelor of Economics</b>	2010 – 2014
	Tsinghua University, China	
<b>AWARDS</b>	Honorable Mention in IEEE Micro Top Picks 2016	Cambridge, 2016
	MIT EECS William Martin Thesis Award <i>for the best master's thesis in computer science</i>	Cambridge, 2016
	Best Paper Award at the 48th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO-48)	Waikiki, 2015
	MIT EECS Grier Presidential Fellowship	Cambridge, 2014
	Tsinghua Outstanding Graduate Award ( <i>1 among 55</i> )	Beijing, 2014
	Tsinghua Top Grade Scholarship ( <i>Highest honor in Tsinghua University, 10 recipients among over 3,000 undergraduate students</i> )	Beijing, 2013
	Tsinghua December 9th Scholarship ( <i>1 among 291</i> )	Beijing, 2012
	Tsinghua Xuetao Plan Scholarship	Beijing, 2011
	National Scholarship ( <i>1 among 42</i> )	Beijing, 2011
	National Scholarship ( <i>1 among 50</i> )	Beijing, 2010
	First Prize in 27th National Physics Competition for Undergraduates Majoring in Physics	Beijing, 2010
	Tsinghua Freshman Scholarship	Beijing, 2009
	Outstanding Graduate Award of the Affiliated High School of Shanxi University	Taiyuan, 2009
	Gold Medal in 25th National Physics Competition for High School Students	Beijing, 2008

**PUBLICATIONS** Guowei Zhang, Nithya Attaluri, Joel Emer, and Daniel Sanchez, “**Gamma: Leveraging Gustavsons Algorithm to Accelerate Sparse Matrix Multiplication,**” In *Proceedings of the 26th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS’21)*, April 2021

Guowei Zhang and Daniel Sanchez, “**Leveraging Caches to Accelerate Hash Tables and Memoization,**” In *Proceedings of the 52th annual IEEE/ACM international symposium on Microarchitecture (MICRO-52)*, October 2019

Guowei Zhang and Daniel Sanchez, “**Leveraging Hardware Caches for Memoization,**” In *IEEE Computer Architecture Letters (CAL)*, 2017

Guowei Zhang, Virginia Chiu, Daniel Sanchez, “**Exploiting Semantic Commutativity in Hardware Speculation,**” In *Proceedings of the 49th annual IEEE/ACM international symposium on Microarchitecture (MICRO-49)*, October 2016  
(**IEEE Micros Top Picks 2016 Honorable Mention**)

Guowei Zhang, “**Architectural Support to Exploit Commutativity in Shared-Memory Systems,**” *Master Thesis, MIT*, June 2016  
(**William Martin Thesis Award for the best master’s thesis in computer science at MIT**)

Guowei Zhang, Webb Horn, Daniel Sanchez, “**Exploiting Commutativity to Reduce the Cost of Updates to Shared Data in Cache-Coherent Systems,**” In *Proceedings of the 48th annual IEEE/ACM international symposium on Microarchitecture (MICRO-48)*, December 2015  
(**Best Paper Award**)

Guowei Zhang and Peter A. Beerel, “**Stochastic analysis of Bubble Razor,**” in *Proceedings of the conference on Design, Automation & Test in Europe (DATE-2014)*, March 2014

**WORK EXPERIENCE** **Compute Architect Intern** June – August 2018  
Special Projects Group, Apple, Inc.

- Manager: Fernando Mujica
- DNN transformations, parallelization, memory allocation, and scheduling optimizations for Apple neural engine accelerators

**RESEARCH EXPERIENCE** **Undergraduate Research Assistant** July – September 2013  
Asynchronous CAD/VLSI Group, University of Southern California

- Advisor: Prof. Peter A. Beerel
- Enhanced the regression system of Proteus, an asynchronous CAD tool
- Proposed models, analysis and optimization for Bubble Razor circuits

**Undergraduate Research Assistant** November 2012 – June 2014  
CAD lab, Tsinghua University, Beijing China

- Advisor: Prof. He Qian
- Proposed self-adaptive filtering algorithm to improve SNR
- Designed major parts of digital signal processing circuits for the integrated biochip

<b>TEACHING EXPERIENCE</b>	<b>Teaching Assistant</b>	February – May 2020
	• MIT 6.823 Computer System Architecture (graduate level)	
	<b>Teaching Assistant</b>	February – May 2018
	• MIT 6.S084 Computation Structures (undergraduate level, equivalent to 6.004)	
<b>COMMUNITY SERVICE</b>	Volunteer of the Centennial of Tsinghua University	2011
	Volunteer of freshmen orientations	2010 – 2012