

# Michael D. Shah

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## EDUCATION

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|--|---|
| Tufts University, Medford, MA<br>Ph.D. Computer Science Engineering          | Graduation: August 2017<br>G.P.A. 4.0/4.0 |
| Tufts University, Medford, MA<br>M.S. Computer Science Engineering           | Graduated: May 2013                       |
| The Ohio State University, Columbus, OH<br>B.S. Computer Science Engineering | Graduated: June 2011                      |

## ACADEMIC HIGHLIGHTS

- Advanced compiler design, OpenGL graphics programming, and advanced data visualization courses. Currently involved in Software Engineering and Systems Research Groups.

## QUALIFICATIONS

- Languages: Proficient(C/C++, Java, Python, C#), Moderate Experience (ASP.net, SQL, ASM, Html, CSS), Prior Experience (jQuery, F#, Swift)
- Software: Xcode, Visual Studio, VIM,, Git, Perforce, Office, GIMP, Win/Mac/Linux Systems.
- APIs/Tools: OpenGL, CUDA, Processing, Unity3D, wings3D, Blender3D, Maya.

## WORK EXPERIENCE

- Senior Graphics Engineer (July 2020 – Present): 4D Pipeline  
Consult on contract projects using modern OpenGL, modern C++, and Maya SDK.
- Assistant Teaching Professor (August 2017 - Present): Northeastern University  
Develop and taught courses in Human-Computer Interactions, Computer Systems, Discrete Mathematics, Algorithms, Computer Graphics, and Game Engine Development.
- Graphics Software Engineer (Feb 2017 - June 2017): Oblong Industries  
Working on LLVM tooling to enable cpu optimizations and updating interactive graphic experiences synchronized across multiple large scale displays.
- Graphics Software Intern (June 2016 - August 2016): Intel Corporation  
I worked on programming LLVM, computer graphics, and SIMD intrinsic instructions.
- Compiler Engineering Intern (June 2015 - September 2015): Sony PlayStation  
I worked on program analysis and optimizations visualization for the LLVM project. The resulting tool visualized several million line programs with twenty-thousand nodes in real time, and is currently pending publication.
- Software Engineering Intern (May 2014 - August 2014): Intel Corporation  
I built samples integrating Intel Media SDK, Perceptual Computing SDK, and open frameworks to find opportunities to improve the interoperability between the tools. We found a method to encode depth and color information from the Perceptual Computing SDK into the Intel Media SDK.
- Research Assistant (Sept. 2011 - August 2017): Tufts University  
Currently working on static analysis tools for finding performance bugs in concurrent programs. Previously I have worked on static analysis tools for finding bug patterns in C Code.
- Teaching Assistant (Jan. 2012 - May 2017): Tufts University  
Data Structures, Algorithms, Operating Systems, Concurrency, Game Design, Computer Graphics, and HCI courses.
- Research Programmer (May 2013- July 2013): Boston Medical Center  
Gathered data and built a model for patient outcomes with HIV and Hepatitis co-infection.
- Graduate Technical Intern (June 2011 - August 2011): Intel Corporation

I worked as a validation engineer developing, supporting, and maintaining pre-silicon software devices prior to manufacturing.

- Research (Independent Study) (June 2010- June 2011): The Ohio State University  
Taking independent study to develop a computer game building tool that teaches K-12 students the principles of computer science and math in a fun learning environment.
- Research Intern (June 2010 – Sept. 2010): Oregon Health and Sciences University  
4D Visualization of tumors in real time using VTK and ITK in order to create better radiation treatment plans for uses in image processing.
- Undergraduate Research (Feb. 2009 – June 2011): Ohio Supercomputing Center  
Project 1: Create 3D models and write Torque Script/C++ and employ them through the Torque 3D graphics engine to test theories on death by PowerPoint hypothesis and study computer interactivity towards human learning.  
Project 2: Create Dog-Knee Arthroscopy Simulator using CUDA/OpenGL in collaboration with the school of Veterinarian Medicine. Vet students will use this simulator to practice learning anatomy of a canine before practicing performing surgery using haptic devices in this simulator.
- Computer Game Programmer (May 2005 – 2009): The Game Creators Limited  
Create full programs and document them to be used as tutorials for The Game Creators Monthly newsletter. Also, moderate the support forums and answer customer questions.

## **ACHIEVEMENTS**

- Tufts Ignite Research Talks, 3<sup>rd</sup> place winner (2016)
- Programming Language Design and Implementation SIGPLAN Travel Grant awardee (2013, 2016, 2017)
- Tufts Ignite Research Talks, 3<sup>rd</sup> place winner (2015)
- Programming Language Design and Implementation NSF Travel Grant awardee (2015)
- Programming Languages Mentoring Workshop Awardee (2014)
- Hackathon Finalist (2011)
- GEM Ph.D. Graduate Fellowship Awardee (2011)
- Choose Ohio First for Bioinformatics Scholarship Award Winner (2010)

## **LEADERSHIP/INVOLVEMENT**

- Graduate Student Council at Tufts University  
Graduate Student Council President (2016-2017)  
Academic Chair and Career Development Chair of the Graduate Student Council (2014-2015)  
Secretary of the Graduate Student Council (2013-2014)  
Computer Science Department Representative (2012-2014)
- Founder of Graduate Student Computer Science Organization (<https://sites.tufts.edu/cslo/>) (2014-2016)
- Ohio State Game Creation Club Treasurer (2009-2011)
- Ohio State Running Club President and webmaster (2007-2011)
- Summer Undergraduate Research Institute (SURI) Member (2010)
- Media, Marketing, and Communications Scholars ASP.net Teacher and Animation Assistant Teacher (2009)
- Association of Computing Machinery (ACM) Member (April 2008 - Present)  
Greater Boston Chapter Member (May 2012 - Present)