



**SUMMARY**

I am a researcher and engineer with a passion for enhancing human creativity through innovative research resting on the foundation of robust engineering. I have a broad range of research and engineering experience in a variety of industrial and academic settings, and am currently pursuing my PhD degree with a focus on machine learning for creativity-enhancing applications at the University of Toronto.

**EDUCATION**

**University of Toronto** 01/2017 - present  
PhD candidate supervised by Karan Singh and Raquel Urtasun.

**Massachusetts Institute of Technology** 02/2013 - 02/2015  
M.S. in Computer Science and Electrical Engineering (accepted into the PhD program).  
Thesis: Methods Enabling Interactive Customization of Fabricable Objects by Non-Professionals.

**New York University** 2008 - 2011  
Non-degree courses: speech recognition, interactive shape modeling, machine learning.

**Boston University** 2003 - 2007  
B.A. in Computer Science, Minor in Mathematics.  
Summa cum laude, College Prize for Excellence in Computer Science.

**EXPERIENCE**

Research and Innovation Engineer 11/2015 - 01/2017  
**Creative Technologies Lab, Adobe Systems**, Cambridge, MA

- Started and led a research project on digital painting interaction, with a first-author SIGGRAPH paper, and planned tech transfer into Adobe Sketch
- Independent project planning, communication with product teams and researchers
- Worked in a variety of technologies for prototyping and tech transfer, including iOS development in swift, glsl, C++, Python, Web development, user study design and analysis, SQL, MATLAB, paint pigment modeling, NLP, interactive techniques

Software Engineering Intern 06/2015 - 09/2015  
**OnShape Inc.**, Cambridge, MA

- Full stack development on the Feature Script DSL IDE at an innovative startup providing the first full-featured CAD solution in the cloud

Research Assistant 02/2013 - 05/2015  
**MIT**, Cambridge, MA

- Conducted original research as a part of MS/PhD (SIGGRAPH publication)
- Worked on projects involving geometry processing, parametric modeling, WebGL, AWS, distributed computing, algorithm development, optimization

Senior Software Engineer and Tech Lead 04/2012 - 02/2013  
**Google GmbH.**, Zurich

- Led a team of 5 people on a project in crowdsourcing data for Google Maps
- Managed technical direction, quarterly planning, collaborations
- Designed and implemented a back end data analysis pipeline for user feedback

Product Manager  
**Google Inc.**, New York

03/2011 - 03/2012

- Led a new project in crowdsourcing local data for Google Maps
- Established project direction, managed collaboration with 10+ teams
- Designed and analyzed experiments for collecting lightweight feedback from users
- Drove the team to launch over 10 successful experiments in 4 Google products

Software Engineer and Researcher  
**Google Inc.**, New York

08/2007 - 03/2011

- Designed and implemented parts of a state-of-the-art Speech Recognition system
- Designed and implemented parts of a large-scale language model training pipeline
- Conducted original research in large-scale and domain specific language modeling, with quality improvements for voicemail and You Tube transcription
- Researched, designed and implemented a machine learning system for formatting automatic transcripts (deployed in Google Voice)
- Designed and implemented an end-to-end web application for searching and viewing transcribed video (deployed on Google Labs)

## SKILLS

- Can advance a research project from conception to launched implementation (and publication)
- Advanced C++; proficient in bash, Javascript, HTML5, Python, swift, SQL; experience with Java, MATLAB
- Industry experience with full-stack development, distributed computing, big data
- Knowledge of computer graphics research and machine learning techniques
- Excellent software design skills; can write robust code in a production environment
- Experience with OpenGL, WebGL, OpenFst (contributor), MapReduce, AWS, etc.
- Strong organizational and project-management skills; good grasp of UX design

## PUBLICATIONS

- **M. Shugrina**, J. Lu, and S. DiVerdi. "Playful Palette: An Interactive Parametric Color Mixer for Artists." *Accepted to SIGGRAPH 2017*.
- **M. Shugrina**, A. Shamir, and W. Matusik. "Fab Forms: Customizable Objects for Fabrication with Validity and Geometry Caching." *SIGGRAPH 2015 (TOG 34(4))*.
- C. Chelba, D. Bikel, **M. Shugrina**, P. Nguyen, and S. Kumar. "Large scale language modeling in automatic speech recognition." *Technical report, Google, 2012*.
- **M. Shugrina**, "Formatting time-aligned ASR transcripts for readability." *In Proceedings of HLT NAACL 2010*. 198-206.
- C. Alberti, M. Bacchiani, A. Bezman, C. Chelba, A. Drofa, H. Liao, P. Moreno, T. Power, A. Sahuguet, **M. Shugrina**, O. Siohan, "An audio indexing system for election video material." *In Proceedings of ICASSP 2009*. 4873-4876.
- **M. Shugrina**, M. Betke, and J. Collomosse, "Empathic Painting: Interactive stylization through observed emotional state." *In Proceedings of NPAR 2006*. 87-96.

## MISC

Good communication skills; fluent in Russian and English; working knowledge of German; Adobe Photoshop, Premiere Pro, and After Effects experience; advanced drawing and oil painting; Vipassana meditation; downhill skiing, running, hiking, cross fit.