# Elena Sizikova

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## Education

**Princeton University, Department of Computer Science** — Princeton, NJ
*PhD Student and National Science Foundation (NSF) Fellow advised by Prof. Thomas Funkhouser* — *2013 - 2019*

**University of Oxford** — Oxford, UK
*BA Mathematics and Computer Science* — *2010 - 2013*

## Work Experience

**New York University** — New York, NY
*Moore Sloan Faculty Fellow/Assistant Professor* — *September 2019 - Present*

**New York University** — New York, NY
*Postdoctral Associate, Denis Pelli Lab, Department of Psychology* — *September 2019 - Present*

**Siemens Healthcare, Vision Technologies and Solutions (VTS) Group** — Princeton, NJ
*Research Intern* — *June 2015 - April 2016, June 2017 - November 2017*

**Adobe Research, Creative Technologies Lab (CTL)** — Seattle, WA
*Research Intern* — *June 2016 - September 2016*

**Heidelberg Institute for Theoretical Studies (HITS)** — Heidelberg, Germany
*Intern Software Developer* — *June 2013 - October 2013*

**Art of Problem Solving Inc** — Remote
*Instructor Contractor* — *August 2011 - Present*

**Codeacademy** — Princeton, NJ and New York, NY
*Teaching Assistant Contractor* — *Fall 2014*

**UCLA IPAM Research in Industrial Projects for Students Program (RIPS)** — Los Angeles, CA
*Team Project Manager* — *June 2012 - August 2012*

**Hein Lab, Oxford University** — Oxford, UK
*Computational Biology Summer School Participant and Research Assistant* — *August 2011 - September 2012*

**Credit Suisse Spring Insight Program** — London, UK
*Intern* — *April 2011*

**Bank of America Spring Insight Program** — London, UK
*Intern* — *April 2011*

## Select Publications

- **E. Sizikova**, Carol Long, Omkar Kumbhar, Najib Majaj, Denis Pelli : Comparing Word Recognition by Humans and Deep Neural Networks. Submitted to Vision Sciences Society (VSS) Meeting 2020.
- **E. Balashova**, J. Wang, V. Singh, B. Georgescu, B. Teixeira, A. Kapoor: 3D Organ Shape Reconstruction from Topogram Images. International Conference on Information Processing in Medical Imaging (IPMI) 2019.
- **E. Balashova**, A. Bermano, V. Kim, S. DiVerdi, A. Hertzmann, T. Funkhouser: Learning a Stroke-Based Representation for Fonts. Computer Graphics Forum (CGF) 2018, to appear.

- **E.Balashova**, V. Singh, B. Teixeira, J. Wang, T. Chen, T. Funkhouser. Structure-Aware Shape Synthesis. International Conference on 3D Vision (3DV) 2018. Spotlight Presentation.
- B. Teixeira, V. Singh, K. Ma, B. Tamersoy, T. Chen, Y. Wu, **E. Balashova**, D. Comaniciu: Generating Synthetic X-ray Images of a Person from the Surface Geometry. CVPR 2018. Spotlight Presentation.
- **E. Sizikova**, T. Funkhouser: Fresco Reconstruction Using a Genetic Algorithm. ACM Journal on Computing and Cultural Heritage (JOCCH) 2018.
- A. Stank, D.B. Kokh, M. Horn, **E. Sizikova**, R. Neil, J. Panecka, S. Richter, R.C. Wade: TRAPP webserver: predicting protein binding site flexibility and detecting transient binding pockets. Journal of Nucleic Acids Research 2017.
- **E. Sizikova**, V. K. Singh, B. Georgescu, M. Halber, K. Ma, T. Chen: Enhancing Place Recognition using Joint Intensity - Depth Analysis and Synthetic Data. ECCV Workshop on Virtual/Augmented Reality for Visual Articial Intelligence (VARVAI), 2016. Best Paper Award.
- **E. Sizikova**, T. Funkhouser: Fresco Reconstruction Using a Genetic Algorithm. EUROGRAPHICS Workshop on Graphics and Cultural Heritage (GCH), 2016. Best Paper Award.
- **E. Sizikova**, T. Funkhouser: Automatically Assembling Frescos from Noisy Pairwise Fragment Measurements. Computer Applications and Quantitative Methods in Archaeology (CAA), 2015. Oral Presentation.
- O. Fried, S. Di Verdi, M. Halber, **E. Sizikova**, A. Finkelstein: IsoMatch: Creating Informative Grid Layouts. Eurographics, 2015.
- C. Quaranta*, I. A. Ibarra*, E. Schwartz*, E. **Sizikova***: Improving Cross-lingual Search Quality. Joint Mathematical Meetings (JMM) 2013. Invited Talk. (* denotes equal contribution.)
- R. Lyngsø, J. Anderson, **E. Sizikova**, A. Badugu, T. Hyland and J. Hein. Frnakenstein: Multiple target inverse RNA folding. BMC Bioinformatics, 2012. High access factor noted by BMC Bioinformatics.

## Awards and Honors

**Moore Sloan Data Science (MSDS) Summit**
*Travel grant to attend and present a poster at the annual summit in Santa Fe, NM* — *November 2019*

**Moore Sloan Fellowship**
*Research support for data science research at the NYU Center for Data Science.* — *2019 - 2021*

**Women in Data Science and Mathematics (WiSDM) 2019 Travel Grant**
*Travel grant to attend the workshop in Brown University, Providence Rhode Island* — *July 2019*

**AWM SIAM Travel Grant**
*Support to the attend AWM Workshop at the 2018 SIAM Annual Meeting and present a poster.* — *July 2018*

**French-American Doctoral Exchange Program (FADEx) Scholarship**
*Support to attend an AI doctoral exchange program in Sophia-Antipolis, Grenoble, and Paris, France.* — *June 2018*

**ECCVW Best Paper Award, sponsored by Xerox Research Europe and Facebook AI Research**
*Awarded for Enhancing Place Recognition Project* — *October 2016*

**Eurographics GCH Best Paper Award**
*Awarded for Fresco Project* — *October 2016*

**CRA-W/Princeton Travel Grant**
*Support to attend the CRA-W Grad Cohort Workshop* — *April 2016*

**School of Eng. and Appl. Science (SEAS) Fellowship**
*Support to attend the Grace Hopper Conference in Phoenix, AZ* — *October 2014, October 2015*

**Center for Digital Humanities (CDH) Fellowship**
*Support to Computer Appl. in Archaeology (CAA) Conference in Siena, Italy* — *December 2014*

**NSF Graduate Fellowship**
*Support of graduate research and tuition for the period of three years* — *June 2014 - June 2018*

**St. Annes College Exhibition**
*Awarded for excellent performance in Moderations and Part A exams* — *October 2011, October 2012*

**MAA Undergraduate Student Poster Session Travel Grant**
*Awarded to support travel to JMM in San Diego, California* — *November 2012*

**Women in Machine Learning (WIML) Travel Scholarship**
*Awarded to support travel to the 2012 WIML at Lake Tahoe, NV* — *October 2012*

**Association of Women in Mathematics (AWM) Essay Contest**
*Honorable Mention* — *April 2009*

**1st Place in Intl. Caucus for Women in Stat. Poster Competition**
*Poster titled: Potential Risk Factors for Drug Addiction* — *February 2009*

**USA Mathematical Talent Search Silver and Bronze Medalist**
*USAMTS is a prestigious nationwide competition in mathematics* — *September 2007 - May 2009*

## Invited Talks

**November 2019:** Structure-Aware Reasoning and Learning, Samsung Research NY
**October 2019:** Shape Synthesis Using Structure-Aware Reasoning and Medical Applications (NYU Data Science)
**June 2019:** Structure-Aware Shape Analysis in Medical Imaging, NYU School of Medicine, Radiology Seminar
**May 2019:** Learning A Stroke-Based Representation for Fonts, EUROGRAPHICS 2019
**July 2018:** Structure-Aware Shape Synthesis, Max Planck Institute for Intelligent Systems (MPI)
**September 2018:** Structure-Aware Shape Synthesis, 3DV 2018
**October 2016:** Wall Painting Reconstruction Using a Genetic Algorithm, EUROGRAPHICS Workshop on Graphics and Cultural Heritage (GCH) 2016
**March 2015:** Automatically Assembling Frescos From Noisy Pairwise Fragment Measurements, Computer Applications and Quantitative Methods in Archaeology (CAA) 2015
**January 2013:** Improving Cross-lingual Search Quality, Joint Mathematical Meetings (JMM) 2013

## Teaching and Service

**NYU Center for Data Science (CDS) Capstone Project and Presentation Course**
*Instructor* — *Fall 2019*

**Deep Learning for Geometric Shape Understanding (SkelNetOn)**
*Program Committee/Point SkelNetOn Keeper* — *November 2018 - June 2019*

**Women in Computer Vision Workshop (WiCV) for CVPR 2019**
*Organizer* — *October 2018 - June 2019*

**Graduate Women in Science and Engineering (GWISE) - NYU High School Conference**
*Mentor* — *November 2018*

**AI-4ALL Summer camp** — Princeton, NJ
*Part-time mentor for the self-driving cars team.* — *August 2018*

**Princeton University Math Club Mentoring Mobius** — Princeton, NJ
*Mentor to 4 undergraduate students* — *October 2016 - December 2016*

**Princeton University** — Princeton, NJ
*Teaching Assistant for COS424: Fundamentals of Machine Learning* — *February 2016 - June 2016*

**Princeton University** — Princeton, NJ
*Teaching Assistant for COS226: Data Structures and Algorithms* — *September 2015 - January 2016*

**Coalition for Queens (C4Q)** — Brooklyn, NY
*Teaching Assistant for Access Code Program HTML/CSS Workshop* — *February 2015*

**University of Oxford** — Oxford, UK
*Math and CS Representative, Math Undergraduate Representative Committee (MURC)* — *October 2010 - June 2013*

**University of Oxford** — Oxford, UK
*Oxford Salsa Society Webmaster* — *October 2010 - May 2013*

**Paper Reviewer**

- *International Journal of Computer Vision (IET), 2017*
- *Journal of Computers & Graphics (CAG), 2016*
- *Shape Modelling International (SMI), 2014*
- *Pacific Graphics (PG), 2018*
- *British Machine Learning Conference (BMVC), 2019*

## Students Supervised

- Jatin Khilnani (CDS Inference and Representation (Masters) Course, Fall 2019, NYU)
- Shuting Gu (CDS Capstone Project Masters) Course, Fall 2019, NYU), joint with Anastasios Noulas
- Anshan He (CDS Capstone Project Masters) Course, Fall 2019, NYU), joint with Anastasios Noulas
- Weiyang Wen (CDS Capstone Project Masters) Course, Fall 2019, NYU), joint with Anastasios Noulas
- Bing Zou (CDS Capstone Project Masters) Course, Fall 2019, NYU), joint with Anastasios Noulas