

## Elena Sizikova

Moore Sloan Faculty Fellow/Assistant Professor, Center for Data Science, New York University (NYU)

Postdoctoral Associate, Pelli Lab, Department of Psychology, New York University (NYU)

**Contact Email:** es5223@nyu.edu

**Website:** <http://esizikova.github.io/>

### Education

#### Princeton University, Department of Computer Science

*PhD Student and National Science Foundation (NSF) Fellow advised by Prof. Thomas Funkhouser*

Princeton, NJ

2013 - 2019

#### University of Oxford

*BA Mathematics and Computer Science*

Oxford, UK

2010 - 2013

### Work Experience

#### New York University

*Moore Sloan Faculty Fellow/Assistant Professor*

New York, NY

September 2019 - Present

#### New York University

*Postdoctoral Associate, Denis Pelli Lab, Department of Psychology*

New York, NY

September 2019 - Present

#### Siemens Healthcare, Vision Technologies and Solutions (VTS) Group

*Research Intern*

Princeton, NJ

June 2015 - April 2016, June 2017 - November 2017

#### Adobe Research, Creative Technologies Lab (CTL)

*Research Intern*

Seattle, WA

June 2016 - September 2016

#### Heidelberg Institute for Theoretical Studies (HITS)

*Intern Software Developer*

Heidelberg, Germany

June 2013 - October 2013

#### Art of Problem Solving Inc

*Instructor Contractor*

Remote

August 2011 - Present

#### Codecademy

*Teaching Assistant Contractor*

Princeton, NJ and New York, NY

Fall 2014

#### UCLA IPAM Research in Industrial Projects for Students Program (RIPS)

*Team Project Manager*

Los Angeles, CA

June 2012 - August 2012

#### Hein Lab, Oxford University

*Computational Biology Summer School Participant and Research Assistant*

Oxford, UK

August 2011 - September 2012

#### Credit Suisse Spring Insight Program

*Intern*

London, UK

April 2011

#### Bank of America Spring Insight Program

*Intern*

London, UK

April 2011

### Select Publications

- M. Ahn, N. Eikmeier, J. Haddock, L. Kassab, A. Kryshchenko, K. Leonard, D. Needell, R. W. M. A. Madushani, **E. Sizikova**, C. Wang : On Large-Scale Dynamic Topic Modeling with Nonnegative CP Tensor Decomposition. Submitted to Women in Data Science and Mathematics (WiSDM) Workshop Proceedings, "Advances in Data Science", AWM-Springer series.
- **E. Sizikova**, C. Long, O. Kumbhar, N. Majaj, D. 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 Artificial 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***Part-time mentor for the self-driving cars team.**Princeton, NJ**August 2018***Princeton University Math Club Mentoring Mobius***Mentor to 4 undergraduate students**Princeton, NJ**October 2016 - December 2016***Princeton University***Teaching Assistant for COS424: Fundamentals of Machine Learning**Princeton, NJ**February 2016 - June 2016***Princeton University***Teaching Assistant for COS226: Data Structures and Algorithms**Princeton, NJ**September 2015 - January 2016***Coalition for Queens (C4Q)***Teaching Assistant for Access Code Program HTML/CSS Workshop**Brooklyn, NY**February 2015***University of Oxford***Math and CS Representative, Math Undergraduate Representative Committee (MURC)**Oxford, UK**October 2010 - June 2013*

**Paper Reviewer**

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

<b>Students Supervised</b>
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- 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