

ROMAN KOUZNETSOV

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EDUCATION

University of Michigan

Expected Graduation Date: 2024

PhD Statistics Student

Expected Candidacy: May 2022

GPA: 3.72 on 4.0 Scale

Case Western Reserve University

Graduation Date: 2019

B.S. in Statistics w/ Actuarial Science Concentration

Secondar Major: Economics

GPA: 3.919 on 4.0 Scale

HONORS AND AWARDS

Honorable Mention for Best Presentation as voted by Prospective Students 2022

A second-place poster award for “deepST: A Graph Convolutional Autoencoder for Spatial Transcriptomics” provided by the University of Michigan Department of Statistics based on a vote by University of Michigan’s prospective statistics PhD students.

Best Theory or Methodology Poster Presentation 2022

An award given by the organizers of the 2022 Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS) to the poster with the best new theory or methodology presented. Poster was titled: “deepST: A Graph Convolutional Autoencoder for Spatial Transcriptomics.”

Rackham Merit Fellowship 2019

A collaborative stipend from the Rackham Graduate School and the statistics graduate program given to assist graduate students with research activities (\$11,598 per semester during the 2021-2022 school year).

Michelson-Morley Scholarship 2016

An annual scholarship worth \$25,500 that is named in honor of the historic experiment by Case School of Applied Science professor Albert Michelson and Western Reserve College Professor Edward Morley and awarded to exceptional students who plan to major in science, technology, engineering, or mathematics fields.

RESEARCH AND WORK EXPERIENCE

University of Michigan, Ann Arbor, MI

PhD Student Researcher

January 2019 - Present

- Attempting to build the first graphical deep generative model for spatial transcriptomics data
- Working with Dr. Jeff Regier and Dr. Jackson Loper to better predict gene expression levels using the MERFISH hypothalamus data set

Progressive Corporation, Mayfield Village, OH

Data Analytics Intern

May 2019 - August 2019

- Built a network graph of employment movement within the Claims Control Department
- Created a package that allowed employees to gain access to an animated timelapse of employment movement
- The package was utilized to help P&C properly allocate new labor (both internally and externally), a decision that costs the company \$3-4 million annually

Veterans Affairs Cleveland, Cleveland, OH

Data Science Intern

September 2018 - May 2019

- Organized and restructured large data sets pertaining to survey responses regarding spinal-cord injuries (SCIs) for analysis
- Implemented various generalized linear models alongside a large team to make conclusions about the priorities healthcare staff should have
- Co-authored a paper with the collaboration of 14 other people (see Publications for details)

Harvard University, Cleveland, OH

Undergraduate Researcher

December 2017 - May 2018

- Created a 1300 observation dataset with 9 measurable variables with each observation representing a city in Illinois
- Worked under Dr. Daniel Shoag, performing regression discontinuity analysis to determine if cities that had home rule had a discernable change in real estate prices
- The early results found here provided further evidence of Dr. Shoag's previous work being more widely applicable: "Rules versus Home Rule. Local Government Responses to Negative Revenue Shocks."

PUBLICATIONS & TALKS

2022

MLCB 2022: deepST: Discovering Spatial Differential Expression with Graph Convolutional Networks

2022

MSSISS 2022: deepST: A Graph Convolutional Autoencoder for Spatial Transcriptomics

2020

Dennis Bourbeau, Abby Bolon, Graham Creasey, Wei Dai, Bill Fertig, Jennifer French, Tara Jeji, Anita Kaiser, **Roman Kouznetsov**, Alexander Rabchevsky, Bruno Gallo Santacruz, Jiayang Sun, Karl B Thor, Tracey Wheeler, Jane Wierbicky. “Needs, priorities, and attitudes of individuals with spinal cord injury toward nerve stimulation devices for bladder and bowel function: a survey” (11/2020)

TEACHING EXPERIENCE

University of Michigan

2020-Present

STATS 507: Data Analysis in Python (2020)

STATS 250: Introduction to Statistics and Data Analysis – Lab Sections 305, 410 (2021)

STATS 250: Introduction to Statistics and Data Analysis – Lab Sections 201, 202 (2021)

Case Western Reserve University Peer Tutor

2016-2017

Taught Precalculus, Calculus I, II, III, Linear Algebra, General Chemistry I, Actuarial Science I & II, Principles of Microeconomics, and Principles of Macroeconomics in 1-on-1 settings.

CERTIFICATIONS AND EXAMS

GRE

Score: 331

Verbal Reasoning: 161

Quantitative Reasoning: 170

Analytical Writing: 4

SOA Probability Exam (Exam P)

Score: 9

PROFESSIONAL AFFILIATIONS

Society of Actuaries (SOA), 2017-Present

Member

LANGUAGES

English: Primary Language, Distinguished Listener, Distinguished Speaker, Distinguished Reading and Writing

Russian: Native Language, Distinguished Listener, Distinguished Speaker, Intermediate

Reading and Writing

Spanish: Intermediate Listener, Novice Speaker, Novice Reading and Writing

COMPUTER SKILLS

Programming: Python, R, SQL, C++, SAS, Stata, Java, HTML/CSS, Tableau, C#, Javascript
(in decreasing order of experience)

Machine Learning Libraries: Pytorch, Pytorch Lightning, PyG, Tensorflow, Numpy, Scipy, Pandas, Matplotlib, OpenCV

Demonstration: LaTeX, Markdown, Mathematica

REFERENCES

Dr. Jeffrey Regier, Assistant Professor

Statistics

University of Michigan

Email: regier@umich.edu

Dr. Jackson Loper, Postdoctoral Research Fellow

Statistics

University of Michigan

Email: jaloper@umich.edu

Dr. Danhong Song, Full-Time Lecturer

Mathematics, Applied Mathematics and Statistics

Case Western Reserve University

Email: danhong.song@case.edu

Dr. Jiayang Sun, Professor, Bernard J. Dunn Eminent Scholar, and Chair, Statistics, College of Engineering and Computing

Statistics

George Mason University

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