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| **Elena Tuzhilina** |  | **Phone:** +1 (647) 482-91-61  **E-mail:** [elena.tuzhilina@utoronto.ca](mailto:elena.tuzhilina@utoronto.ca)  **Web:** elenatuzhilina.github.io |

##### Current academic position

**June 2022 – current**, *Department of Statistical Sciences, University of Toronto*, Toronto, Canada

*Assistant Professor in Statistics (tenure-track)*

##### Degrees

**September 2017 – June 2022**, *Department of Statistics, Stanford University*, Stanford, USA

*Ph.D. in Statistics* [Advisor: Trevor Hastie]

Thesis: Advances in multivariate statistics and its applications

**September 2015 – June 2017**, *Department of Data Analysis, Yandex School of Analysis*, Moscow, Russia­

*Two-year program in Data Science* [Advisors: Ilya Muchnik, Boris Polyak, Anatoliy Michalskiy]

**September 2015 – left in 2017**, *Faculty of Mechanics and Mathematics, Moscow State University*, Moscow, Russia

*Ph.D. in Mathematics* [Advisors: Andrey Raigorodsky, Alexander Bulinski]

**September 2010 – June 2015**, Faculty of Mechanics and Mathematics, Moscow State University, Moscow, Russia

*B.Sc and M.Sc. in Mathematics* [Advisor: Alexander Bulinski]

GPA: 5.0 out of 5.0 (with highest distinction)

##### Publications

**2023**, “Statistical curve models for inferring 3D chromatin architecture”, **E.Tuzhilina**, T.Hastie, M.Segal, *submitted to Annals of Applied Statistics*.

**2023**, “Smooth multi-period forecasting with application to prediction of COVID-19 cases”, **E.Tuzhilina**, T.Hastie, D.McDonald, K.Tay, R.Tibshirani, *submitted to Journal of Computational and Graphical Statistics*.

**2022**, “Principal Component Analysis”, M.Greenacre, P.Groenen, T.Hastie, A.D’Enza, A.Markos, **E.Tuzhilina**, *Nature Reviews Methods Primers*.

**2021**, “An Open Repository of Real-Time COVID-19 Indicators”, A. Reinhart, L. Brooks, M. Jahja,

A.Rumack, J.Tang, W. Saeed, T.Arnold, A.Basu, J.Bien, A.Cabrera, A.Chin, E.Chua, B.Clark, N.DeFries, J.Forlizzi, S.Gratzl, A.Green, G.Haff, R.Han, A.Hu, S.Hyun, A.Joshi, J.Kim, A.Kuznetsov, W.Motte-Kerr, K.Lee, Y.Lee, Z.Lipton, M.Liu, L.Mackey, K.Mazaitis, D.McDonald, B.Narasimhan, N.Oliveira, P.Patil, A.Perer, C.Politsch, S.Rajanala, D.Rucker, N.Shah, V.Shankar, J.Sharpnack, D.Shemetov, N.Simon, V.Srivastava, S.Tan, R.Tibshirani, **E.Tuzhilina**, A.Nortwick, V.Ventura, L.Wasserman, J.Weiss, K.Williams, R.Rosenfeld, R.Tibshirani, *Proceedings of the National Academy of Sciences*.

**2021**, “Canonical Correlation Analysis in high dimensions with structured regularization”, **E.Tuzhilina**, L.Tozzi, T.Hastie, *Statistical Modelling SAGE*.

**2021**, “Relating whole-brain functional connectivity to self-reported negative emotion in a large sample of young adults using group regularized canonical correlation analysis”, L.Tozzi, **E.Tuzhilina**, M. Glasser, T.Hastie, L.Williams, *NeuroImage*.

**2020**, “Principal curve approaches for inferring 3D chromatin architecture”, **E.Tuzhilina**, T.Hastie, M.Segal, *Biostatistics*.

##### Other evidence of impact and contribution

**Funding**

**2023 – 2028**, Discovery Grant, *Natural Sciences and Engineering Research Council of Canada*.

**2023 – 2024**, Accelerator Grant, *The University of Toronto McLaughlin Centre*.

**2022 – 2024**, Catalyst Grant, *The University of Toronto Data Sciences Institute*.

**2020 – 2022**, Stanford Data Science Scholarship, *Stanford University*.

**2016 – 2018**, Grant supporting the SmartCAT project, *Skolkovo Institute of Science & Technology*.

**2014 – 2017**, Grant supporting research on amino acids conformations*, Russian Science Foundation*.

**Academic awards**

**2023**, Dorothy Shoichet Women Faculty in Science Awards of Excellence, *University of Toronto*.

**2022**, Student Travel Award, *Joint Statistical Meeting, SFASA*.

**2022**, Best poster award, *Statistics in the Big Data Era conference, Simons Institute*.

**2022**, Outstanding Teaching Assistance Award, *Stanford University*.

**2021**, Stanford Teaching Assistant Award, *Stanford University*.

**Patents**

**2019**, “Data-driven automated selection of profiles of translation professionals for translation tasks”, A.Ukrainets, V.Gusakov, I.Smolnikov, **E.Tuzhilina**, *patent number US20190065463*.

**2018**, “System and method of intellectual automatic selection of performers of translation”, A.Ukrainets, **E.Tuzhilina**, V.Gusakov, I.Smolnikov, *patent number RU2667030*.

**Software**

*RCCA (R package)* Implementation of regularized canonical correlation analysis with structured data. Includes three modifications: with standard L2 penalty, with partial L2 penalty, and with group penalty.

*WLRMA (R package)* Performs weighted low-rank matrix approximation. Allows to solve both rank-constraint problem as well as its convex relaxation.

*PoisMS* *and* *DBMS (R packages)* Allows to compute 3D chromatin reconstruction using a contact matrix. The approach is based on principal curve technique modeling the chromatin directly by a smooth curve.

##### Mentorship

**Graduate trainees**

**September 2023 – present**,Arian Hashemzadeh Amirkhizi, “Statistical multivariate techniques with pairwise regularization penalties”, *PhD at the Department of Statistical Sciences, University of Toronto, Canada*.

**November 2022 – present**, Nikita Glukhov, “Statistical methodology for chromatin conformation reconstruction”, *PhD at the Department of Computer Science, Skolkovo Institute of Science and Technology, Russia*.

**Undergraduate trainees**

**September 2022 – December 2022**, Jin Qin, “Statistical learning: methods and applications”, *BSc at the Department of Statistical Sciences, University of Toronto, Canada*.

**January 2023 – June 2023**, Anna Kosovskaya, “Low-rank matrix approximation and applications”, *BSc at the Department of Mathematics, High School of Economics, Russia*.