ANTON ALYAKIN

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319A Clark Hall, 3400 North Charles Street, Baltimore, MD, 21218

EDUCATION

Johns Hopkins University *December 2019*
Master of Science in Engineering (M.S.E.), Applied Mathematics and Statistics GPA: 3.90

- Thesis topic: "Robust Hypothesis Testing of Location Parameters using Lq-Likelihood-Ratio-Type Test in Python"
- 2020 Applied Mathematics and Statistics Prize for Outstanding Master's Research

Johns Hopkins University *May 2019*
Bachelor of Science (B.S.), Computer Science and Applied Mathematics and Statistics GPA: 3.96

- Senior Honors Thesis topic: "Motif Discovery in the Irregularly Sampled Time Series Data"
- Departmental Honors with Thesis, Computer Science
- Departmental Honors, Applied Mathematics and Statistics
- 2019 Applied Mathematics and Statistics Achievement Award
- Fall 2015 - Spring 2019: Whitening School of Engineering Dean's List

TASIS The American School In Switzerland *May 2015*
American High School Diploma GPA: 4.00

- Valedictorian
- 2015 AP Scholar with Distinction
- 2015 Shah Akbar Khan Award for Excellence in Mathematics

RESEARCH

JHU Department of Applied Mathematics and Statistics *December 2019 - Present*
Assistant Research Engineer

- Working under the supervision of Professor Carey E. Priebe on various problems in classical statistics and modern data science, such as multivariate analysis, hypothesis testing, and statistical inference on graphs; applications include connectomics and social network analysis.

JHU Department of Applied Mathematics and Statistics *May 2019 - December 2019*
Research Assistant

- Worked under the supervision of Professor Carey E. Priebe on problems in robust hypothesis testing and curved mixture estimates.

JHU Department of Computer Science *May 2017 - May 2019*
Research Assistant

- Worked under the supervision of Professor Suchi Saria on predicting adverse outcomes such as cardiogenic shock from electronic health records data using machine learning approaches.

TEACHING

Johns Hopkins University

Teaching Assistant for 580.475 Biomedical Data Science *Fall 2019*
Teaching Assistant for 553.430/630 Introduction to Statistics *Spring 2019*
Teaching Assistant for 553.436/636 Data Mining *Fall 2018*

SOFTWARE

lqrt

- Author and maintainer of **lqrt**, a Python package that implements the Robust Hypothesis Testing of Location Parameters using Lq-Likelihood-Ratio-Type Test.

graspy

- Contributor to **graspy**, an open-souce Python package for doing statistical analyses on network-valued data.

Data-Driven Discovery of Models Library - JHU Graph Primitives

- Maintainer of the repository with JHU's contribution to the Data-Driven Discovery of Models (D3M) library of selectable primitives that are used as basic building blocks in the automated model discovery process. JHU's primitives are aimed at tackling machine learning problems with graph, or netwrok, as input, such as Vertex Classification, Community Detection, Link Prediction and Seeded Graph Matching.

VOLUNTEERING

Johns Hopkins Bayview Medical Center Emergency Department *June 2019 - Present*

- Volunteered weekly at the Bayview Adult Emergency Room.
- Primary task included surveying patients' for the Baltimore Accountable Health Community program, aimed at better understaing their experiences within and outside the department, as well as referring eligible patients to the Healthcare Access Maryland.
- Assisted with quality assurance rounding, assisting patients with additional comfort measures such as blankets, food, and a helping hand.

Baltimore Rescue Mission Clinic *January 2017 - October 2017*

- Interviewed patients to identify chief complaints and social determinant barriers.
- Helped performing a variety of medical procedures, including measuring blood pressure and blood sugar.
- Helped organizing the implementation and sustaining of the Electronic Health Records system

PREPRINTS AND PUBLICATIONS

1. **A. Alyakin**, J. Agterberg, H. Helm, and C. E. Priebe, *Correcting a Nonparametric Two-sample Graph Hypothesis Test for Graphs with Different Numbers of Vertices*, submitted, 2020.
2. F. Rahman, N. Finkelstein, **A. Alyakin**, N. A Gilotra, J. Trost, S. P. Schulman, and S. Saria, *Using Machine Learning Tools for Early Prediction of Cardiogenic Shock in Patients with Acute Decompensated Heart Failure*, submitted, 2020.
3. **A. Alyakin**, Y. Qin, and C. E. Priebe, *LqRT: Robust Hypothesis Testing of Location Parameters using Lq-Likelihood-Ratio-Type Test in Python*, submitted, 2019.

SKILLS AND QUALIFICATIONS

Programming Languages (in order of proficiency):

- Python (including PyTorch and TensorFlow), R, Matlab, Java, C++.

Languages:

- English, Russian.

Other skills:

- LaTeX, Git, Databases (PostgreSQL).