ANTON ALYAKIN

alyakin314@gmail.com ⋄ alyakin314.github.io

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

RESEARCH

JHU Department of Applied Mathematics and Statistics *January 2020 - March 2021*

Assistant Research Engineer

- Worked under the supervision of Professor Carey E. Priebe and Professor Joshua T. Vogelstein on various problems in classical statistics, data science, and causal inference. Applications include connectomics, social network analysis, and causal inference from insurance claims data.

JHU Department of Applied Mathematics and Statistics *June 2019 - December 2019*

Research Assistant

- Worked under the supervision of Professor Carey E. Priebe on 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 using machine learning approaches with electronic health records data to predict adverse outcomes such as cardiogenic shock.

PREPRINTS

1. J. Chung[†], B. Varjavand[†], J. Arroyo, **A. Alyakin**, J. Agterberg, M. Tang, J. T. Vogelstein, C. E. Priebe, *Improving Power of 2-Sample Random Graph Tests with Applications in Connectomics*, submitted, 2021

2. **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.

3. 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.

4. **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.

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

microsoft/graspologic (previously **neurodata/graspy**)
- Contributor to and maintainer of **graspologic**, an open-source Python package that provides utilities and algorithms for doing statistical analyses on graph- and network-valued data. Notable contributions include latent distribution test implementation and the align module.

alyakin314/lqrt
- Author and maintainer of **lqrt**, a Python package that implements the Robust Hypothesis Testing of Location Parameters using Lq-Likelihood-Ratio-Type Test.

Data-Driven Discovery of Models Library - JHU Graph Primitives
- One of the primary mainterners of the repository that is JHU's contribution to the D3M's 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 netowrk, inputs, such as Vertex Classification, Community Detection, Link Prediction and Seeded Graph Matching.

SKILLS

Programming Languages (in order of proficiency):
- Python (including PyTorch and TensorFlow), R, Matlab, Java, C++.

Languages:
- English, Russian.

Other skills:
- LaTeX, Git, Databases (PostgreSQL, BigQuery).

CLINICAL

Johns Hopkins Bayview Medical Center - Emergency Department   *June 2019 - March 2020*
- Volunteered weekly at the Bayview Adult Emergency Room.
- Surveyed 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 and food.

Johns Hopkins Hospital - Heart and Vascular Institute   *February 2019 - February 2019*
- Shadowed Dr. Tampakakis and Dr. Kral in the cardiology department of the Johns Hopkins Hospital for a total of 50 hours.

Baltimore Rescue Mission Clinic   *January 2017 - October 2017*
- Volunteered weekly at the local shelter pro bono clinic.
- 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.