Sam Rosen

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WORK EXPERIENCE

Genentech   **Summer 2021**
Research and Development Intern   San Francisco, CA
- Lead development of *epiviz.gl*, a JS framework for visualizing genomic data with WebWorkers and WebGL.
- Developed data selection, rendering, navigation with a pseudo grammar-of-graphics implementation.

Datadog   **Sept. 2020 – Dec. 2020**
Software Engineering Intern (Cloud Integrations Team)   New York, NY
- Optimized and bolstered Azure crawlers responsible for crawling millions of data points an hour.
- Debugged and implemented fixes for issues found by customers in production for crawled metrics.

DraftKings   **Summer 2019**
Software Engineering Intern (DevOps Team)   Boston, MA
- Created a scalable application for live tracking of release branches to production using AWS Lambda.
- Designed serverless architecture scalable to arbitrary codebase size with complete up-to-date release data.
- Designed DynamoDB schema and frontend with React for a responsive, efficient API and user interface.

Johns Hopkins University: Applied Physics Lab   **Summer 2017, 2018**
Software Engineering Intern (Large-Scale Analytics Group)   Laurel, MD
- Programmed low-memory implementations of machine learning algorithms for training on arbitrarily large data.
- Created analytics for graph multi-edge merging, time-series, and data fusion using Java and MapReduce.
- Developed a random forest algorithm on a distributed data system for classifying attributes on graph vertices.

UMass Mathematics Department   **Sept. 2018 – May 2019**
Undergraduate Teaching Assistant   Amherst, MA
- Held office hours for *Calculus for Life and Social Sciences I* for 5 hours a week
- Created and ran review sessions for exams.

SELECTED PROJECTS

JS Package: *epiviz.gl* | github.com/epiviz/epiviz.gl   **May 2021 – Aug. 2021**
- Developed for Genentech to visualize genomic data seamlessly via declarative specifications and WebGL.
- Designed to visualize millions of data points and entire chromosomes at 60 FPS with high precision.

Python Package: *Diary* | github.com/SamGRosen/diary   **Nov. 2016 – Present**
- Created a no-dependency package to make asynchronous logging easy with a highly customizable API.
- Published on PyPI with complete test code coverage, continuous integration, and extensive documentation.

Research Project: *SnakePacking* | github.com/SamGRosen/Circle-Packing   **Jan. 2018 – May 2018**
- Completed semester long project researching the NP-HARD problem of the most efficient way to pack circles.
- Formulated an algorithm which packs circles in linear time achieving competitive densities near 70 percent.

EDUCATION

Duke University   **Aug. 2021 – Present**
PhD Student, Statistics   Durham, NC

University of Massachusetts: Amherst   **May, 2021**
BS, Computer Science; BS, Mathematics   Amherst, MA
- Recipient of UMass Chancellor's Award – Four year academic scholarship   (3.9/4.0) GPA
- Member of UMass Boxing Club and Minute Movers; Grader for Differential Equations

SKILLS & INTERESTS

- **Programming Languages:** Python***, Java***, JavaScript***, Matlab*, Scala*, R*, C*, Cpp* WebGL*
- **Research Interests:** Statistical Computing, Spectral Clustering, Network Inference, High-Dimensional Data
- **Professional Interests:** High Performance Computing, API Design, DevOps, Math Modeling, Baseball