

# Samuel Lotz

Senior Software Engineer

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## SUMMARY

Versatile and collaborative Senior Software Engineer with strong knowledge in statistics, Big Data engineering, computational chemistry, DevOps, and high-performance computing (HPC). Applies learning to practice quickly and takes initiative to solve problems. Works well in teams and independently; mentors and partners cross-functionally.

## EXPERIENCE

### ROIVANT SCIENCES | SENIOR SOFTWARE ENGINEER

February 2021 – November 2022 (acquired Silicon Therapeutics Feb. 2021) | New York, NY

Originally at Silicon Therapeutics which was acquired by Roivant Sciences shortly after I joined.

- Served as lead engineer and system integrator on computational drug discover software workflows deployed to Cloud and on-prem HPC resources.
- Developed multiple internal Python libraries and applications:
  - Lead engineer on Drug Discovery Workflow project, integrating a variety of cutting-edge physics and machine learning methods.
  - Lead engineer on Simulation Analysis Framework project, a big data analysis framework with support for idiosyncratic data formats for simulation data; provided an abstraction layer that allowed for unified analysis code to reduce code sprawl and correctness.
- Developed multiple CI/CD pipelines for highly optimized & reproducible software builds tuned to our internal supercomputer using Spack.
- Developed Docker build pipelines in a Kubernetes environment.
- Mentored and consulted with scientists to engineer bespoke computational workloads.
- Collaborated closely with the High Performance Computing team to ensure system stability across dozens of workloads.

### MICHIGAN STATE UNIVERSITY | GRADUATE ASSISTANT

2014 – March 2021 | East Lansing, MI

- Researched drug design & discovery using physics simulations leveraging importance sampling and anomaly detection techniques.
- Designed and performed analysis pipelines on large and unusually complex datasets using unsupervised learning techniques and custom high-dimensional data visualizations.
- Designed and developed 10+ Python software packages, including some cornerstone programs used in both academia and industry.
- Mentored junior graduate students in both programming and science.

## PROJECTS

### WEPY | PYTHON

2017 - current

- Python framework for running weighted ensemble simulations that leverages a new HDF5 database that allows for complex queries with improved storage speed and size.

## SKILLS

### PROGRAMMING

Advanced Experience:

Python • Bash/Shell

Proficient:

SQL • Java • C/C++

Learning:

C/C++ • Graphics APIs • Web

### LIBRARIES/Frameworks

Numpy • SciPy • Pandas •  
PyTest • HDF5

### TOOLS/PLATFORMS

Linux • Git • Docker • Gitlab  
CI/CD • Google Cloud • Spack  
• SLURM • Kubernetes

### KNOWLEDGE

Statistics • Big Data  
Engineering • Computational  
Chemistry • DevOps • HPC

## EDUCATION

### MICHIGAN STATE U.

PH.D IN BIOCHEMISTRY &

MOLECULAR BIOLOGY

7/2014-3/2021 | East Lansing, MI

### SLIPPERY ROCK U.

BS IN BIOLOGY

MINORS IN CHEMISTRY, MATH,

COMPUTER SCIENCE

8/2010-5/2014 | Slippery Rock, PA