

# Paul Nguyen

[paul.tqh.nguyen@gmail.com](mailto:paul.tqh.nguyen@gmail.com)  
985.640.9500

Website/Portfolio: [tinyurl.com/paul-tqh-nguyen](https://tinyurl.com/paul-tqh-nguyen)  
<https://www.linkedin.com/in/paul-tqh-nguyen/>

## TECHNICAL SKILLS

**Languages:** Python, Javascript, D3JS, Common LISP, C/C++, MLIR, Bash, SPARQL, PostgreSQL, LLVM IR

**Tools:** PyTorch, NumPy, SciPy, Pandas, NetworkX, Matplotlib, Prefect, Conda, PyBind11, JIRA, Jenkins

## INDUSTRY EXPERIENCE

**Optiver**, *Quantitative Engineer (ML Research Team)*

Mar 2022—Jun 2023

- Developed & owned time-series analytics C++ library operating on pandas dataframes via pybind11.
- Designed mechanism to cut AWS bill by 10-15% by reducing requested cores without extending wall time.
- Built trade, price, and instrument definition extractors for live and historic packet feeds in C++/pybind11.
- Orchestrate MLOps infrastructure to ensure data validity both on-premises and in S3/cloud storage.
- Serve on-call duties for weekend model training processes, addressing technical issues as they arise.
- Maintained Flask web app used to facilitate CI/CD, merge conflicts, and deployment via BitBucket.
- Day-to-day tools include Python, C++17, NumPy, Pandas, Jenkins, bash, Scikit-Learn, Jira, and JupyterLab.

**Anaconda**, *Open Source Software Engineer (Metagraph Team)*

Feb 2020—Mar 2022

- Develop open source graph analytics tools for data scientists, which was absorbed into [NetworkX](#).
- Research & develop large-scale graph algorithms using linear algebra operations (as opposed to traversal).
- Design JIT compiler optimization passes in C/C++ for our sparse tensor algebra language. [Example Usage](#)
- Gave webinar on graph analytics for data scientists with 4,823 registrants and 1,370 live attendees. [Talk Link](#)
- Day-to-day tools include Python, Javascript, C++17, NumPy, Pandas, SciPy, PyTorch, and JupyterLab.

**Cycorp**, *Sr. Data Engineer & LISP Engineering Manager*

Feb 2017—Feb 2020

- Built a deep-learning NLP model for word-sense disambiguation in our open information extraction system.
- Independently rebuilt compiler to translate from our graph DB language to PostgreSQL and REST APIs.
- Built & designed distributed knowledge graph search and ETL engine to boost data processing by 18-24x.
- Managed and mentored 3 data integration team members.
- Maintained & extended proprietary knowledge graph engine and SQL query optimizer.

**University of Virginia**, *Graduate Computer Graphics Researcher*

Charlottesville, VA

- Designed domain-specific language and compiler for image processing program analysis and optimization.
- Published in [ACM Transaction on Graphics](#) and presented at [ACM SIGGRAPH](#).

## SIDE PROJECTS & OPEN SOURCE CONTRIBUTIONS

**OSS Contribution to [google/jax](#)** - [PR Link](#) - Implemented `jax.numpy.poly`, (determines polynomial for roots).

**Automatic Differentiation Engine** - [Github Repo](#) - PyTorch clone for training machine learning models via SGD.

## EDUCATION

**University of Virginia**, *Master of Computer Science*

**Washington & Lee University**, *B.S. Mathematics, B.S. Computer Science*