

Paul Nguyen

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TECHNICAL SKILLS

Primary Languages: Python, Javascript, D3JS, Common LISP, C/C++, MLIR

Secondary Languages: Bash, SPARQL, HTML, CSS, PostgreSQL, MSSQLServer, LLVM IR

Tools: PyTorch, Scikit-Learn, NumPy, SciPy, Pandas, NetworkX, Matplotlib, JIRA, Jenkins, SVN, Git

INDUSTRY EXPERIENCE

Anaconda

Open Source Software Engineer ([Metagraph Team](#))

Austin, TX

Feb 2020—Present

- Implement graph neural network algorithms, e.g. GraphSAGE, graph2vec, node2vec, LINE.
- Research & develop graph algorithms based on linear algebra/matrix operations (as opposed to traversal).
- Design & build system for efficiently translating between graph data representations on CPU and GPU.
- Develop JIT compiler to translate from MLIR assembly to Python callable functions. [Example Usage](#)
- Research & implement MLIR optimization passes in C/C++ for sparse tensor algebra in our JIT compiler.
- 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, NumPy, Pandas, SciPy, PyTorch, Scikit-Learn, Javascript, and JupyterLab.

Cycorp

Lead Data Integration Engineer & Knowledge Graph Engineer

Austin, TX

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 knowledge graph language to SQL & SPARQL.
- Day-to-day tools included Python, PyTorch, SQL, Common LISP, JIRA, test-driven development, and Scrum.

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

Open Source Contribution to [google/jax](#)

[Pull Request Link](#)

- Implemented `jax.numpy.poly`, which returns a polynomial for a given set of roots.

Automatic Differentiation Engine (PyTorch Clone)

[Github Repo](#)

- Built a toy auto-differentiation engine with tutorials for building/training simple machine learning models.

EDUCATION

University of Virginia

Master of Computer Science

Charlottesville, VA

Washington & Lee University

B.A. Mathematics, B.S. Computer Science

Lexington, VA