

DONALD PIERCE

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EDUCATION

New York University

B.A. Physics, B.A. Mathematics | Courant Institute

• Treasurer of the Society of Physics Students (2016-2017)

• **Relevant Coursework:** Linear Algebra, Ordinary and Partial Differential Equations, Multivariate Calculus, Computational Modeling and Simulation, Combinatorics with Graph Theory, Probability Theory

New York, NY

August 2014 — Present

RESEARCH EXPERIENCE

ATLAS Experiment through NYU Physics

Data Scientist in Experimental Collider Physics at CERN

New York, NY

May 2015 — Present

- Developed a novel method to optimize algorithm efficiency by weighting results from different algorithms
- The hybrid algorithm approach using gradient descent was approved for testing and is currently in use in three data-collection chains at the Large Hadron Collider ATLAS experiment as of April 2018, filtering TBs / second
- Gave more than 12 talks presenting on algorithm efficiency, correlation between ATLAS algorithms, and hybrid algorithm approaches to the Missing Transverse Momentum (MET) Group at CERN
- Work has contributed to both the [ATLAS 2017 PUB Note](#) and the upcoming Run 2 Performance Note
- Used C++ with the ROOT Data Analysis Framework to design new data-collection algorithms
- Became an authorized CERN cloud user; compile data into ROOT trees over globally-distributed Linux servers

Center for Quantum Phenomena at NYU Physics

Study in Quantum Computing

New York, NY

May 2018 — Present

- Developing course notes for a class on quantum computing using Rigetti's Forest SDK
- Studying the foundations of quantum machine learning
- Running optimization experiments in Labber which tune microwave frequencies for 5mK QBit measurements

WORK EXPERIENCE

Spheryx, Inc.

Software Developer and Scientific Research Intern

New York, NY

May 2018 - August 2018

- Designed algorithms which process large pandas data-frames and extract scientific plots for users
- Gave three talks presenting on new methods to computationally determine the profile of nano-particle flows from video data; using better logic and fit algorithms
- Built a user-friendly web app for the company using Dash by Plotly for scientists to more easily analyze videos
- Studied potential applications of TensorFlow in company software, such as learning particle type and position

SELECTED INDEPENDENT PROJECTS

baskett

Startup Founder | Web-based Payments Application Deployed on AWS

New York, NY

December 2017 — Present

- baskett is a side-project which aims to make pooling money easier
- Designing a Python-based web application using Flask, Jinja2, SQL, AWS Neptune (graphical database), and Stripe for payments

AWARDS

- **NYU DURF Grant** — Awarded \$1,000 for “compelling and significant” research

November, 2017

SKILLS & INTERESTS

• **Languages** Proficient in Python, Pandas, NumPy, C++, ROOT; familiar with TensorFlow, Amazon Web Services (RDS, S3, Neptune, EC2), Gremlin, SQL, Jinja2, HTML; experienced with Git, Unix/Linux, Flask, Mathematica, MATLAB, Vim, LaTeX

Python 

C++ 

TensorFlow 

• **Hobbies** Stargazing, playing jazz sax, writing philosophy, thinking about how to design the cities of the future