DONALD PIERCE

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WORK EXPERIENCE

Elementus, Inc. New York, NY
Data Scientist *July 2019 - October 2019*

- Authored quantitative coverage of the PlusToken crypto scam on the company's blog which later went viral
- Automated many steps in the product's data pipeline by designing cloud computing processes in SQL \ C++
- Delivered client-facing graph visualizations to tell stories with big data, using Node JS (functional programming)
- **References**: Max Galka (CEO) max@elementus.io Alex Robnett (Deployment Strategist) alex@elementus.io

Spheryx, Inc. New York, NY
Data Science Intern *May 2018 - August 2018*

- Enhanced the workflow for scientists at the company by building a data dashboard using Dash by Plotly
- Lead a project to expand the capabilities of the company's microscope (xSight) using statistical analysis
- Delivered solutions to low-statistics experiments by incorporating accurate fitting functions into company software

RESEARCH EXPERIENCE

Center for European Nuclear Research (CERN) New York, NY
Student Data Scientist *May 2016 - May 2019*

- Developed a novel method to optimize algorithm efficiency by weighting results from different algorithms
- Increased signal data (filtering out noisy data) by 5% at high energies using new approach
- Analysis has contributed to the ATLAS 2017 PUB Note and the ATLAS Run 2 Performance Note
- Achieved results which were adopted into three data ingestion chains at ATLAS, filters TBs / sec
- Gave more than 12 talks presenting on algorithm efficiency to Missing Transverse Momentum (MET) Group
- Used C++ with the ROOT Data Analysis Framework to design new data clustering algorithms
- Became an authorized CERN cloud user; compiled data into ROOT trees over globally-distributed Linux servers

SELECTED INDEPENDENT PROJECTS

Traffic New York, NY
Machine Learning in Python available at github.com/donjpierce/traffic *November 2018 - February 2019*

- Designed a reinforcement learning algorithm for my own simulation of traffic flow on real road networks
- Used Q-learning and ϵ-greedy techniques to allow cars to try alternate routes until shortest time is found
- Used TensorFlow and Keras to train a three-layer linear learning architecture

EDUCATION

New York University New York, NY
B.A. Physics, B.A. Mathematics | Courant Institute *September 2014 - May 2019*

- 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

AWARDS

- **NYU DURF Grant** — Awarded $1,000 for "compelling and significant" research *November, 2017*

SKILLS & INTERESTS

- **Languages** Advanced German speaker with over 7 years of German language and culture classes
- **Technologies** Proficient in SQL, Python, Pandas, Scikit-Learn, NumPy, Node JS, C++, ROOT, Google Cloud Services, Google BigQuery; familiar with TensorFlow, Amazon Web Services (RDS, S3, Neptune, EC2), Gremlin, Jinja2, HTML; experienced with RESTful web apps, Git, Unix/Linux, Flask, Django, Mathematica, MATLAB

Python **C++** **Node JS**

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