I. David Rein

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Education

Duke University - B.S. Computer Science, Minors in Mathematics, Philosophy: Class of 2021

- GPA: 3.78/4.0
- Linear Algebra, Data Structures and Algorithms, Advanced Multivariable Calculus, Computer Architecture, Intro Data Science, Intro High Dimensional Data Analysis, Advanced Intro Probability, Operating Systems, Machine Learning (graduate level)

James Martin High School: Class of 2017

- Top 3% of class - ACT: 35 - SAT: 1550 - Math II SAT Subject Test: 800
- National Merit Scholar

Research Experience

Duke Data+: 2018 Summer - 2018 Fall

- **Machine Learning Research Intern**
- Operationalized the machine learning pipeline for the Duke Medical Center analysis of Electronic Medical Records (EMR)
- Aided the transition to an Apache Spark distributed workflow by developing tools for Duke Forge researchers
- Natural Language Processing (NLP) - Used doctors' notes to classify premature babies with growth failure (used state-of-the-art word embedding and modeling techniques)
- Continued work through 2018 Fall, where I developed a fast, parallelized preprocessing toolkit

National Institute of Standards and Technology (NIST): 2017 Summer

- **Data Science Intern**
- Applied and Computational Mathematics Division of the Information Technology Lab
- Performed exploratory data analysis/visualization of molecular dynamics simulations of thermoset polymers (time series analysis)
- Optimized code for memory and time efficiency on large datasets

Skills and Activities

- Marketing Director on Executive Board for Duke Undergraduate Machine Learning
    - Organized Fall 2018 Duke Datathon with 250+ participants and 325+ applications
- Fluent in Java, Python, experience with SQL, R, C++
- Scikit-learn, Pandas, Dask, Keras, Gensim, PySpark (Apache Spark)
- Wrote a genetic algorithm where virtual agents learned to survive in a competitive ecosystem through fixed-topology neuroevolution: 2016-2017
    - My partner and I wrote our own ML library and developed a GUI to monitor agents' progress (and watch their battles)
- Coursera Courses
    - Deep Learning Specialization: 2018
    - Stanford Machine Learning Course: 2016