I. DAVID REIN

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EDUCATION

Duke University   May 2021
- B.S. Computer Science, Minors in Philosophy, Mathematics **-** GPA: 3.8/4.0
- Machine Learning (graduate level), High Dimensional Data Analysis, Advanced Probability, Linear Algebra, Advanced Multivariable Calculus, Operating Systems, Computer Architecture, Data Structures and Algorithms

RESEARCH EXPERIENCE

MedIX REU: DePaul and UChicago: Computer Vision Research   June - August 2019
- Individual drusen segmentation with sparse volumetric SD-OCT sampling

Duke University: Deep Learning: Theory and Use   January - May 2019
- Designed materials for the graduate-level *Foundations of Deep Learning* course, taught in Fall 2019.
- Created lecture slides, and designed illustrative experiments regarding regularization, NAS, quantization, and training strategies. Course is part of the SAMSI 2019 Program on Deep Learning, and is taught by Dr. David Banks.

Duke Data+: Machine Learning Engineering & Research   June - December 2018
- Operationalized the ML pipeline with Spark for the Duke Forge analysis of Electronic Medical Records (EMR)
- Continued work through 2018 Fall, where I developed a fast, parallelized NLP preprocessing toolkit

National Institute of Standards and Technology (NIST): Data Science Intern   June - August 2017
- Applied and Computational Mathematics Division of the Information Technology Lab
- Data analysis/visualization of molecular dynamics simulations of thermoset polymers

LEADERSHIP

Duke Undergraduate Machine Learning: Co-President   August 2018 - Present
- Marketing Director (2018-2019)
- Organized 2018 Duke Datathon with 250+ participants, helped raise and manage $70k+ budget
- Regularly host speakers for seminars and workshops to engage undergraduates in ML; average 20-40 attendees
- Organized 2019 Duke Machine Learning Day, a conference for undergraduates with 125+ attendees

Duke Effective Altruism Arete Fellowship: Director   August 2019 - Present
- 12-week discussion-based program to introduce 10-20 undergraduates to Effective Altruism

ACTIVITIES AND SKILLS

ASA Duke DataFest: 1st Place - Best Insight Award   April 2019
- Competed in group against 425+ undergraduate (2/3) and graduate (1/3) students from 8 universities
- Predicted fatigue from biometric data of the Canada women's rugby 7s team with a Cox proportional hazards model.

Kenan Institute for Ethics Policy Prize in the Ethics of Emerging Tech: 2nd Place   April 2019
- Co-authored research paper on mechanics, ethics, and international policy of orbital debris and anti-satellite weaponry
- Presented paper at 2019 Duke Conference on the Ethics of Emerging Technology

Other Experience
- Fluent in Python, experience with Java, SQL, R, C++, MATLAB, HTML, CSS
- Very experienced with Scikit-Learn, Pandas, TensorFlow, familiar with Dask, Gensim, NLTK, OpenCV
- Wrote a genetic algorithm where virtual agents learned to survive in a competitive ecosystem through fixed-topology neuroevolution. Developed ML library from scratch, and created GUI to monitor progress. (2016-2017)