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Daniel Ryan Furman

A challenge-driven data scientist aspiring to transform energy systems, sustainable policies, and green technologies.

EDUCATION

University of Pennsylvania May 2020
Bachelor of Arts; Magna Cum Laude *Philadelphia, PA*
Major: Earth Science with Distinction | Minor: Mathematics
Cumulative GPA: 3.79 / 4.00 | Cumulative Major & Minor GPA: 3.82 / 4.00
Awards: Rose Undergraduate Research Award (Penn, '20); NSF Award #1757952 ('19); CURF Sustainability Action Grant (Penn, '18); EES Hayden Scholars Grant (Penn, '18); SICB ('21) and SCCUR ('19) conference proceedings
Relevant Coursework: Numerical Mathematics, Computational Linear Algebra, Machine Learning, Data Analytics, Data Mining for Big Data, Modeling Geographic Space, Biostatistics, Mathematical Game Theory, Calculus I – III
Semester Abroad: James Cook University, Queensland, AUS (with stats. research in AWT assemblage modeling)

PROFESSIONAL EXPERIENCE

Data Science Researcher | Harvey Mudd (NSF grant #1757952) | *Claremont, CA* | Code May 2019 – present
- Pioneers geo-spatial machine learning frameworks with climatological and ecological information, which informs effective desert biodiversity conservation in southwestern United States (Firefox link: SICB '21).

Geophysics Researcher | Penn Ice Physics Lab (CURF grants) | *Philadelphia, PA* | Code Sep 2017 – May 2020
- Led original geophysics experimentation probing large-scale cryosphere processes, discovered novel near-surface physics for ice sheet flow as explored in my award-winning senior thesis (CURF grant write-up).

Data Science Consultant | Official World Golf Rankings (OGWR) | *Completed Remotely* Mar – May 2019
- Directed analytics investigating the ranking system's fairness, discovered bias towards American-based tours with categorical PCA biplots after correcting extensive errors in the OGWR's aged databases.

Strategy Intern | Wildlife Works | *San Francisco, CA & Indonesia* May – August 2017
- Spearheaded field research exploring a REDD+ conservation project, finding inadequacies in the carbon-credit investment's impact in under-served communities across East Kalimantan (PSR blog write-up).

SKILLS & PUBLICATIONS

Overview: Creative hypothesis designer, team leader and collaborator, detail-oriented thinker, adaptable, tenacious

Programming Languages: Python (machine learning, data mining, recursion, objects, functions), R (geo-statistics, modeling, analytics), C++ (objects and data structures), MATLAB (numerical methods), Zsh (bash pipelines)

Python Libraries: including NumPy, matplotlib, SciPy, SymPy, Scikit-Learn, PyCaret, PyTorch, TensorFlow, keras, catboost, lightgbm, pyimpute, cloudpickle, mlflow, pandas, Apache-Spark, rasterio, geopandas, conda, and pip

MOOCs: Scalable Data Science (cert), Object-Oriented Data Structures in C++ (cert), Ordered Data Structures in C++ (cert), Missing Semester CS (MIT), Deep Learning (Yann LeCun), Computational Thinking in Julia (MIT)

Conference Publication: (1) DR Furman et al., *Society for Integrative and Comparative Biology Meeting*, Jan. 3, 2021. (Firefox link); **Conference Talk:** (2) DR Furman and SK Halvorsen, *SCCUR Meeting*, Nov. 23, 2019.

INTERESTS & VOLUNTEERING

- Hobbies include surfing, playing music (guitar, bass, keys), rock climbing, reading, and being outdoors.
- Teaching Volunteer with Philadelphia Water and the Cook-Wissahickon School ('16-17, 3 hours per week)
- Volunteer with Star Paws Rescue ('13-16, 4 hours bi-weekly) and Marine Mammal Center ('16, 5K run)
- UPenn environmental community, e.g., Penn Sustainability Review: "The Indirect Hand of Man" ('17)
- UPenn Sigma Alpha Mu (two-time brotherhood chair, '17-18 and '19-20)
- UPenn D1 Varsity Golf Team ('16-17), Captain at the Harvard Westlake School Golf Team ('15-16)
- Certified PADI Rescue Scuba Diver with AQF CPR, First Aid, and O_2 training ('19)