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# Daniel Ryan Furman

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A challenge-driven researcher and data scientist interested in scaling green energy systems and technologies

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## 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:** Penn Rose Undergraduate Research Award ('20); NSF Data Science Award #1757952 ('19); SICB Poster ('21); SCCUR Presenter ('19); Penn CURF Sustainability Grant ('18); Penn EES Hayden Scholars Grant ('18)

**Coursework:** Numerical Mathematics, Computational Linear Algebra, Machine Learning, Data Analysis in Earth Science, Statistical Data Mining for Big Data, Modeling Geographic Space, Statistics for Biologists, Calculus I – III

**Semester Abroad:** James Cook University, Queensland, Australia (with research in AWT ecological modeling)

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## PROFESSIONAL EXPERIENCE

**Data Science Researcher** | Harvey Mudd (NSF #1757952) | *Claremont, CA* | [Code](#) May 2019 – present

- Pioneers geo-spatial machine learning frameworks with climatological and ecological data, which informs effective biodiversity conservation in southwestern United States deserts ([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, published newly discovered ice densification physics 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](#))
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## SKILLS & PUBLICATIONS

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

**Programming Languages:** Python (modeling, recursion, object-orientation), R (modeling and statistics), C++ (object-orientation and data structures), MATLAB (numerical math), OCaml (value-orientation), Zsh (terminal)

**Python Libraries:** pyimpute (contributor), pandas, numpy, matplotlib, seaborn, scipy, sympy, scikit-learn, pycaret, apache-spark, tensorflow, keras, catboost, lightgbm, cloudpickle, eli5, mlflow, rasterio, geopandas, glob, flake8

**Publications:** DR Furman, SK Halvorsen, and SC Adolph. Assessing Climate Change Impacts ... with Ensemble Species Distribution Models. *Society for Integrative and Comparative Biology*, 1/3/2021 ([Firefox link: SICB '21](#))

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## INTERESTS & VOLUNTEERING

- Hobbies include surfing, playing music (guitar, bass, keys), rock climbing, reading, and being outdoors
- Watershed science TA with Philadelphia Water and Cook-Wissahickon School ('16-17, 3 hours per week)
- Article published in Penn Sustainability Review (PSR), "[The Indirect Hand of Man](#)" ('17)
- Volunteer with Star Paws Rescue ('13-16, 4 hours bi-weekly) and Marine Mammal Center ('16, 5K run)
- Sigma Alpha Mu (two-time brotherhood chair, '17-18 and '19-20)
- Member of UPenn Varsity (D1) Golf Team ('16-17)
- Certified PADI Rescue Scuba Diver with AQF CPR, First Aid, and O<sub>2</sub> training ('19)