Daniel A. Farbowitz

Data Scientist and Researcher

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Pages
LinkedIn in   Github ⍾

Research Interests

- Statistical Modeling
- Bias in Algorithms
- Biomedical Optimization
- Machine Learning Methods
- Econometric Analysis
- Research-based Policy

Education

University of Sheffield / MSc (Distinction) Solar Cell Technology
OCTOBER 2020 - SEPTEMBER 2021, Sheffield, UK

Postgraduate taught program covering implementation, innovation, coding, and analysis in silicon and developing photovoltaics. Capstone projects included combining different 20-year datasets in weather recording to foresee changes in solar cell performance due to climate change, constructing entrepreneurial models, and independently cleaning, summarizing, and visualizing experimental data with Python and LaTeX.

Skills

- Python
- C++
- STATA
- Technical writing
- Technical communication
- Data visualization
- Project Management
- React
- Experimental Design
- MANOVA
- Statistical Analysis
- Mathematical Modeling
- Problem-Solving Techniques
- Data workflow

Ongoing Research

Automation Programming of Mass Spectroscopy Analysis / Co-author
Applied code to MALDI-TOF xml and txt data outputs to merge and clean datasets, convert into easily readable visualizations for species identification, and check novel peak signal data against database values for autocorrelation.

***American Anthropologist* – A Meta-Analysis /** Co-author
Wrote data mining algorithm that organized unique research in the journal's 133-year history into spreadsheet format. Identified publishing trends using machine learning, regression analysis, and natural language processing.

Completed Research

Organic Solar Cells: The Role of Solvents in Device Performance as Studied by Ultrafast Spectroscopy / Master's Dissertation

Performed organic nanoparticle ink fabrication, spin-coating, and vapor deposition in clean lab environment. Reviewed academic literature and consolidated into a technical summary of nanoparticle ink cells. Analyzed organic semiconductor active layers on fs-μs scale. Wrote several Python programs to transfer, validate, and present spectroscopic data.

Leadership Experience

University of Sheffield / Student Representative (Physics PGT)
NOVEMBER 2020 - SEPTEMBER 2021, Sheffield, UK

Gathered postgraduate physics students' course concerns and addressed solutions with physics administration to facilitate learning in an online teaching environment. Served on the Equality, Inclusion, and Diversity Committee.

Benjamin Franklin Institute of Technology / Senate Organizing Committee
NOVEMBER 2020, Boston, MA

Fostered interest in, held meetings for, and developed procedure for faculty self-governing body. The Senate is dedicated to accountability, antiracism, and allowing affordable education for its students to preserve the school's mission.

Work Experience

Benjamin Franklin Institute of Technology / Adjunct Instructor in Physics and Mathematics
DECEMBER 2018 - JUNE 2021, Boston, MA

Led up to 20-student classrooms. Taught fundamental math, geometry, pre-calculus, conceptual physics, physics I, and physics lab. Reached out frequently to keep students engaged. Gave personal tutoring based on student need.

Wai Kru Mixed Martial Arts / Front-End Web Developer
APRIL 2015 – JUNE 2017, Boston, MA

Reformatted website from proprietary software and modified into HTML and JavaScript. Added scheduling and developed new graphics for homepage..

Conferences

Royal Society of Chemistry: Photophysics and Photochemistry Group Early Career Researcher Conference / Presenter
OCTOBER 2021, Online

Summarized dissertation research in three-minute video and participated in panel discussion on Photophysics/Photochemistry for social good.