Julian Florez

Contact Information

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Research & Career Interests

Sustainability (energy, equitable transitions). Technoeconomic and optimization models. Industrial operations, supply chains. Low- and negative-emission technologies and systems.

Education

B.S.E Industrial Operations Engineering, University of Michigan — 2019 - present

Minor: Complex Systems, GPA: 3.85 (Deans List)

Emphasis in sustainability and energy

Professional Experience

Visiting Researcher, *King Abdullah University of Science and Technology, Saudi Arabia* — 2022

- Four-month research internship through the Visiting Student Research Program. Work on comparing optimal green ammonia supply chains vs publicly stated investments with relevance to the Saudi Arabian ecosystem.

Researcher, *University of Michigan Ann Arbor: Innovation for Impact, Climate Change* — 2022

- Selected for the Center of Entrepreneurship's yearlong 2022 Climate Change course, gained formal training on CCUS technologies and the financial landscape while conducted research with an emerging startup to explore geothermal energy's role in decarbonized scenarios through multi-objective optimization decision modeling.

Research Intern, *Boundless Impact Research & Analytics* — Fall 2021

- Researched emerging sustainable technologies across diverse industries to write and present professional annual industry financial briefs to a hub of impact leaders at a life cycle assessment investment firm.

Undergraduate Complexity Researcher, *Santa Fe Institute* — Summer 2021

- Selected to be in the Undergraduate Complexity Research Program (formerly REU). Collaborated with faculty and PhD members on a self-created research project utilizing Tableau and R on *The Dynamics of Company Waste with Analysis on Environmental Impact Scaling*.

Lab Researcher II, ASSET Lab, *University of Michigan Ann Arbor* — 2021

- Researched, designed, and developed a multi-objective optimization model in Python incorporating workforce analysis analyzing the retirement of coal plants in the United States. Publication under review.

Staff Writer, *Michigan Journal of International Affairs* — 2021

- Staff writer in the Europe region covering technical sustainability topics with a geopolitical perspective. Recent pieces include analysis of the world's first energy island in Denmark and the development of hydrogen in Europe.

Lab Researcher I, ASSET Lab, *University of Michigan Ann Arbor* 2019-2021

- Conducted research on renewable energy capacity values in a *National Assessment of Wind and Solar Resources*. Created a realistic Python power system model, collaborated across technical disciplines, and synthesized results into a peer reviewed research paper.

Software Intern, *Microsoft* Summer 2019

- Served alongside software engineers, attorneys, and product managers to identify product data blind spots in the Microsoft Office division. Created and deployed a widely adopted (200k+ downloads) open-source telemetry package.

Publications & Reports

Florez, J. (Spring 2022) Hydrogen: A Fuelture in the Making. *Michigan Journal of International Affairs*.

Bromley-Dulfano, I., **Florez, J**., & Craig, M. T. (2021). Reliability benefits of wide-area renewable energy planning across the Western United States. *Renewable Energy*, *179*, 1487-1499.

Florez, J. (Winter 2021) Shifting Winds of Power. *Michigan Journal of International Affairs*.

Research Presentations

2021

Florez, J. The Dynamics of Company Waste with Analysis on Environmental Impact Scaling *Santa Institute REU Research Talk*. Santa Fe, NM

Bromley-Dulfano, I. **Florez, J.**, & Craig, M. T. Reliability benefits of wide-area renewable energy planning across the Western United States. *International Symposium on Sustainable Systems and Technology*, *Michigan University-wide Sustainability and Environment Conference, University of Michigan Engineering Research Symposium, University Research Opportunity Program Summer Symposium*.

Honors

Clyde Johnson Industrial Engineering Scholarship 2022

Emerging Leader Verge 21, GreenBiz 2021

Boeing Industry Merit Scholarship 2020-2021

Alumni Merit Scholarship 2019-present

Skills

Software Development and Data Analysis: C++, Python, Java, R, Tableau, Typescript