Charlotte Rivard

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Education

University of Connecticut | 2027 (expected)| M.S. Applied and Resource Economics

- USDA National Needs Fellowship in Data Science

Simmons University | 2019 | B.S. Data Science and Analytics

- Major: Data Science & Analytics, GPA: 3.9 *Summa cum laude*
- Concentration: Economics
- Minor: Sustainability

Berkeley Haas Executive Education | Sept 7-10, 2021 | Training

- Economics of Energy and the Environment

Rio Salado Community College | 2024 | Coursework

- Calculus with Analytic Geometry II & III, Elementary Linear Algebra

Experience

Senior Research Analyst | The Brookings Institution | Jan 2022-Jul 2025 | 40 hrs/wk

- Provides key data insights and visualizations for Brookings scholars and their respective high-level advisory groups to the World Bank, G20, and COP processes.
- Compiles and analyzes data on development finance, debt, creditworthiness, aid effectiveness, investment needs, and climate using R and STATA to web scrape and access APIs.
- Performs regressions to impute creditworthiness and bond yields for developing countries.
- Designed and maintains an internal website for sharing latest findings and documenting work.
- Promoted from Research Analyst to Senior Research Analyst, June 2024.

Research Assistant | The Brookings Institution | Jul 2021-Jan 2022 | 40 hrs/wk

- Independently web scraped over 300MB of European Union Emissions Trading Scheme data using Java and Python scripts. Found keys to merge transactions, accounts, and compliance data.
- Assisted scholars in publication figures, fact checking, reviewing, and web publishing.

Research Assistant | Woodwell Climate Research Center | Sep 2019-Jul 2021 | 30-40 hrs/wk

- Technical lead on several projects aimed at modeling soil carbon and investigating its potential as a natural climate solution. Worked primarily in R, Python, and Google Earth Engine.
- Developed a rangeland carbon monitoring web application, with the goal of informing rangeland managers and carbon markets by providing high resolution weekly soil carbon data.
- Built machine learning models from mid-infrared spectral data to estimate soil carbon stocks in a cost effective and scalable way. Calculated and visualized model performance.

Geospatial Consultant | LaRC NASA Develop | Jun-Aug 2019 | 32 hrs/wk

- Finalized a Python based tool for modeling artificial light pollution from satellite imagery to a ground based visualization, for use by the National Park Service.
- Educated 50+ National Park Service employees and presented to NASA Langley leadership.

Research Analyst Intern | Green Choice | Jun-Aug 2018 | 16 hrs/wk

- Provided creative insights for the startup phase of the GreenChoice app— a mobile app

aimed at informing consumers how healthy and sustainable different products are.
- Researched, designed, and programmed Python scoring systems for grocery products.

Environmental Campaign Intern | Environment Massachusetts | Jan-Apr 2017 | 8 hrs/wk
- Actively lobbied at the state house to get co-sponsorship for several solar bills.
- Successfully contacted and educated legislators and their staff members regarding active bills.

Skills

Mathematics
Statistical analysis and regression, multivariate calculus, linear algebra

Computer Science
R, Python, Javascript, Java, Stata, SQL, cloud computing, machine learning

Spatial Analysis
ArcGIS, QGIS, Google Earth Engine, mapping in R and Python

Publications Please visit my personal website for information about my contributions.

Journal Articles

Xia et al. Coupling Remote Sensing with a Process Model for the Simulation of Rangeland Carbon Dynamics. Forthcoming journal publication. Journal of Advances in Modeling Earth Systems.

Xia et al. Leveraging legacy data with targeted field sampling for low-cost mapping of soil organic carbon (SOC) stocks on extensive rangeland properties. Geoderma. July, 2024.

Kharas, Homi and Charlotte Rivard. Unpacking Developing Country Debt Problems. Global Solutions Journal. April, 2024.

Sanderman et al. Soil organic carbon fractions in the Great Plains of the United States: an application of mid-infrared spectroscopy. Biogeochemistry. February, 2021.

Row et al. Land-based measures to mitigate climate change: Potential and feasibility by country. Global Change Biology. October, 2021.

Policy Briefs

Kharas, Homi and Charlotte Rivard. Unpacking developing country debt problems: Selected reforms to the international financial architecture. The Brookings Institution. April, 2024.

Kharas, Homi and Charlotte Rivard. Financing the Sustainable Development Goals: The big stuck. The Brookings Institution. September, 2023.

Kharas, Homi and Charlotte Rivard. Debt, creditworthiness, and climate: A new development dilemma. The Brookings Institution. December, 2022.

Kharas, Homi and Charlotte Rivard. The yawning gap between SDG attainment and international development financing. The Dag Hammarskjold Foundation and the United Nations Multi-Partner Trust Fund Office. September 2022.

Blogs

Kharas, Homi and Charlotte Rivard. Swimming against the tide on financing for development. The

Brookings Institution. April, 2024.

Kharas, Homi and Charlotte Rivard. Investing in development works. The Brookings Institution. April, 2024.

Kharas, Homi and Charlotte Rivard. 30 developing countries to watch in 2023. The Brookings Institution. January, 2023.

Kharas, Homi and Charlotte Rivard. Financing for sustainable development is clogged. The Brookings Institution. May, 2022.

Conferences and Media

Simmons University. Charlotte Rivard '19 Applies Data Science to Study Climate Change. April, 2022.

Rivard et al. Developing a New Geospatial Approach for Rangeland Carbon Monitoring - NASA/ADS. American Geophysical Union, Fall Meeting 2020, abstract. December, 2020.

Rivard, Charlotte. Sustainability at Simmons College Survey. Association of Environmental Sciences and Studies Conference. June, 2018.

Awards

Simmons University Honors Program Community Engagement Award	2019
Simmons University Data Science & Analytics Department Award	2019

Extracurriculars

Brookings Diversity, Equity, and Inclusion Committee Member	2023-Present
Brookings Data Network Steering Committee Member	2022-Present
Brookings Abled and Disabled Allies Partnering Together co-founder and secretary	2023-2024
Simmons University Academic Mentor	2018-2019
Simmons University Sustainability Club President	2018-2019
Simmons University Sustainability Club Outreach Chair	2017-2018
Simmons University Swimming & Diving Team, butterfly and freestyle	2015-2019
Colleges of the Fenway Orchestra, cellist	2015-2019