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Citizenship: USA/UK

Christopher Hull

LinkedIn
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Education

D.Phil Engineering Science **Oct 2021 – Jun 2024**
University of Oxford
Thesis: "Knowledge and tools to accelerate the electrification of sub-Saharan Africa's paratransit industry"
Research Group: Energy and Power Group (EPG)
Oxford University Boat Club (OUBC)

M.S. Management Science & Engineering (MS&E) **Sep 2020 – Jun 2021**
Stanford University
Energy and Environment Track

B.A. Economics **Sep 2016 – Jun 2020**
Stanford University
Stanford Men's Crew

Experience

ML/AI Research Engineer **Nov 2021 – Jun 2024**
Monumo *Cambridge, UK*
- Architect transformers and diffusion models with electromagnetic and mechanical performance emulators in the loop to help guide design and optimization of novel 3D electric motor designs (PyTorch).
- Build diffusion model motor design output -> performance simulation pipeline.

Energy Systems Analyst **Nov 2021 – Jun 2024**
Oxford Dept. of Engineering Science *Oxford, UK*
- Machine learning and data analysis in Python for Local Energy Oxfordshire (LEO), forecasting vehicle and heat pump load uptake in Oxfordshire until 2050 to aid Scottish and Southern Electricity Network (SSEN) in infrastructure planning.
- Plan topics and organize monthly knowledge exchange conferences for an international group of electricity grid operators in the International Community for Local Smart Grids (ICLSG).

Simulation Engineer **Jan 2022 – Jun 2023**
World Bank Contract, University of Oxford
- Simulated electric paratransit fleet charging needs and operational greenhouse gas emissions in Python for the World Bank options report "Paratransit Decarbonization in South Africa," evaluating the feasibility and impact of electrifying a paratransit fleet in Johannesburg, South Africa.

Engineering Project Management **Oct 2021 – Aug 2023**
Stellenbosch, South Africa & Oxford, UK
- Collaborated with partners from Stellenbosch University and Rham Equipment in South Africa to design and implement the first electric minibus taxi retrofit in sub-Saharan Africa.
- Developed vehicle electro-kinetic models in Python to define energy and power requirements for electric minibus taxis in various driving conditions.

Startup Business Development – Energy Efficiency **June 2020 – Dec 2020**
Gemini Energy Solutions *San Francisco, CA, USA*
- Worked closely with CEO & Founder to develop company growth strategy, financial projections, and fundraising pitch.
- Held a lead role in client outreach and marketing with city governments and utilities.

Startup Business Development – Green Hydrogen **Sep 2019 – Jan 2020**
Origen Hydrogen *Stanford, CA, USA*
- Developed financial model and go-to-market strategy to assist with the commercialization of breakthrough AEM electrolyzer technology that produces hydrogen with renewable energy.

Coral Reef Research Scientist **July 2019 & Summer 2024**
Palau International Coral Reef Center

- 3D reconstruction of coral topology in Rock Islands using aerial and underwater photogrammetric footage in Metashape.
- Analyzed biogeochemical data from thermistors, ADCPs, and CTDs using Stata to assess seawater condition and flux in the Rock Islands.
- Presented findings to local scientists at Palau International Coral Reef Center.
- Collect aerial and underwater photogrammetric datasets to enhance deep learning algorithms for classifying coral health on the Darwin200 voyage in Gambier Islands and French Polynesia.

Climate Policy Research Assistant **Jun 2019 – Sep 2019**
Niskanen Center *Washington, D.C., USA*

- Statistical analysis of US power sector committed emissions using R to improve existing methodology, update past estimates, and support an educational campaign for Congressional Offices.

Teaching

Graduate MSc supervisor **Jun 2022 – Ongoing**
University of Oxford *Oxford, UK*

- Co-supervised two Energy Systems MSc students at Oxford for their master's dissertations.

Tutor and Course Designer **Jul 2022 – Jul 2023**
Oxford Royale *Oxford, UK*

- Developed syllabus and delivered intensive summer courses for Oxford Summer Courses (OxSC) in Economics and Business & Entrepreneurship for students aged 16 - 24.
- Delivered masterclass for Oxford Royale on the prospects of electric vehicles in developing countries for students aged 13 - 24.
- Provided college counseling and private tutoring services for high school students aged 15+.

Graduate Teaching Assistant **Jan 2021 – June 2021**
Stanford University *Stanford, CA, USA*

- CEE 273S: Electricity Economics; MS&E 241: Economic Analysis; MS&E 274: Dynamic Entrepreneurial Strategy
- Ran weekly sections and office hours with personalized instruction. Created and graded homework assignments and tests. Develop class and lecture materials for the instructors.

Undergraduate Teaching Assistant **Jan 2018 – Jan 2019**
Stanford University *Stanford, CA, USA*

- Econ 50: Economic Analysis I
- Wrote and grade assignments and exams for 200+ students. Ran weekly sections of 20 students and office hours. Provided individualized tutoring for struggling students. Create and grade homework assignments and tests.

Volunteer

Mechanical Engineering Volunteer-Exchange **April 2019**
Workaway *Saint Trieves, France*

- Provided mechanical engineering and fix-it services to prepare commercial yacht for tourist season.

Worldwide Opportunities on Organic Farms (WWOOF) **Summer 2017**
Gîte Les Ombelles *Lalley, France*

- Maintained farm crops using sustainable framing techniques and oversee care of livestock.
- Provided hospitality service and facilitate cultural exchange for 30+ young students from international Franco-German youth group.

Publications

- Hull, C., Giliomee, J. H., Collett, K. A., McCulloch, M. D., & Booysen, M. J. (2023). "High fidelity estimates of paratransit energy consumption from per-second GPS tracking data". *Transportation Research Part D: Transport and Environment*, 118, 103695.
- Hull, C., Collett, K. A., & McCulloch, M. D. (2024). "Developing a representative driving cycle for paratransit that reflects measured data transients: Case study in Stellenbosch, South Africa". *Transportation Research Part A: Policy and Practice*, 181, 103987.
- Hull, C., Giliomee, J. H., Visser, M., & Booysen, M. J. (2024). "Electric vehicle adoption intention among paratransit owners and drivers in South Africa". *Transport Policy*, 146, 137-149.
- Giliomee, J. H., Hull, C., Collett, K. A., McCulloch, M., & Booysen, M. J. (2023). "Simulating mobility to plan for electric minibus taxis in Sub-Saharan Africa's paratransit". *Transportation Research Part D: Transport and Environment*, 118, 103728.
- Lacock, S., Du Plessis, A., Hull, C., McCulloch, M., & Booysen, M.J. (2024) "Simulating Electric Vehicle Powertrain Efficiency with Driving Cycle Data and Electric Motor Efficiency Maps". *2024 32nd Southern African Universities Power Engineering Conference* (SAUPEC), Stellenbosch, South Africa, 2024, pp. 1-6.

Competitions and Awards

IET Outstanding Researcher Postgraduate Prize (1st prize – £10,000) **2024**
Institute of Engineering and Technology Travel Award **Summer 2023**
Oriel College Travel Award **Summer 2023 & 2024**
MIT EnergyHack Hackathon **Nov 2020**

- First prize (team of four) among 50+ teams in a competition to create a plan to reduce merchant risk in wholesale energy market on a grid with high renewables penetration. Solution involved creating a co-located solar + storage model to derisk investment.

Skills & Interests

Programming	Python, R, Julia, Stata, C++, MATLAB, Raspberry Pi
Communication	English (native), French (intermediate)
Other	Git, WordPress, Microsoft Office, LaTeX, Shell
Clubs & Societies	The Explorer's Club, Institution of Engineering and Technology (IET)