Austin Herrick

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EXPERIENCE

Penn Wharton Budget Model   Philadelphia, PA
Senior Analyst   January 2019 - Present
Research Associate   July 2017 – December 2018

- Manage development of the Demographic Microsimulation, a microfounded projection of the U.S. population built from more than 30 interconnected economic models, with all models and infrastructure written in Python
- Construct ETL data pipelines to smoothly collect, clean, impute, analyze, and store large microdata surveys and administrative data, including the ACS, CPS, SIPP, and NCHS datasets
- Build statistical and machine learning demographic models projecting household formation, marriage markets, fertility, immigration, internal migration, and other economic and demographic phenomenon
- Manage Research Associate projects, including creating timelines, assigning responsibilities, and conducting code reviews
- Co-lead hiring team for RA candidates, and lead training for new hires, including with a self-written Python course
- Administrate stable codebases for data retrieval, data processing, and the Demographic Microsimulation, and work with developers through a Github Flow system

University of Chicago   Chicago, IL
Research Assistant, Center for Robust Decisionmaking on Climate and Energy Policy   June 2016 – September 2016

- Researched and evaluated capital malleability and committed emissions assumptions from more than 100 published papers in a variety of economic literature, and wrote a report synthesizing the state of the field
- Examined literature and documentation for 21 complete general equilibrium models linking environmental and economic impacts, in order to determine their degree of sensitivity to capital transition concerns

Sustainability Intern, Facilities Services: Campus Planning + Sustainability   June 2015 – June 2016

- Built a calculator tool to preform cost-benefit analysis and compare savings across buildings for energy efficiency upgrades to campus properties, identifying savings of up to $2,000,000 over a 5 year period
- Analyzed data for the university's Greenhouse Gas Inventory, and provided trend reports for key pollution metrics as well as reports documenting potential strategies for improving data collection and reducing emissions

Boy Scouts of America   Morris, IL
Ecology Conservation Director, Rainbow Scout Reservation   January-August 2013, 2014
Ecology Conservation Instructor, Rainbow Scout Reservation   June-August 2010, 2011, 2012

- Directed planning and implementation of all scheduling, operations, and curriculum (including classes, conservation, and experiments) for the summer camp program at the Ecology Center, serving approximately 550 scouts over a 6 week period
- Prepared closing reports and written curriculum for the use for national inspections, council oversight, and future staff

EDUCATION

The University of Pennsylvania   Philadelphia, PA

Masters of Computer and Information Technology   August 2021 – Present

- GPA: 4.0

Additional Coursework: Computer Science through Program Design (OCaml and Java)   Jan – May 2021

The University of Chicago   Chicago, IL

Bachelor of Arts in Economics   June 2017

- GPA: 3.64

- Relevant Coursework: Econometrics, Statistical Analysis, Computer Science, Micro and Macroeconomic Analysis (Honors), Accounting, Monetary Policy, Industrial Organization

PROGRAMMING

- *Python* – 5 years of professional experience in managing codebases, cleaning and analyzing microdata, constructing demographic models, visualizing and validating data, and building code infrastructure for a large-scale microsimulation, with extensive experience with Pandas, Numpy, Luigi, and Statsmodels
- *Java* – Primary language used during graduate coursework
- *SQL* – Minor professional use for efficient dataset access and moderate use in coursework
- *OCaml, R, Stata, Matlab* – Moderate use for coursework in computer science and economics

LEADERSHIP

Phoenix Sustainability Initiative   Chicago, IL

President   May 2016 – May 2017

Vice President   May 2015 – May 2016

- Managed, trained, and directed 7 Project Leaders overseeing teams of 5-6 members, responsible for a range of projects such as hosting discussion panels, promoting sustainable food, organizing career treks, and networking with the community

WRITING / PUBLICATIONS

- *Berkovich, Costa, Herrick*, (2022) "Immigration and the Macroeconomy". PWBM Working Paper Series. Available at https://budgetmodel.wharton.upenn.edu/issues/2022/1/5/w2022-1
- Briefs for PWBM *Economic Matters* blog. E.g, *Estimates of TCJA Repatriation of Foreign Earnings on Investment and GDP: (*https://budgetmodel.wharton.upenn.edu/issues/2018/8/29/estimates-of-tcja-repatriation-of-foreign-earnings-on-investment-and-gdp)
- *Churchill, Biderman, Herrick*, (2020) "Magic: The Gathering is Turing Complete". The Proceedings of the 10th International Conference on Fun with Algorithms. Available at https://arxiv.org/abs/1904.09828v2