

ASHKAN MIRZAEI

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[Website](#) | [GitHub](#) | [GitLab](#) | [LinkedIn](#) | [Google Scholar](#)

EDUCATION

Ph.D., Industrial Engineering and Operations Research

May 2022

Minor: Statistics

University of Missouri, Columbia, MO

- Thesis: *Impacts of woody biomass production and biopower generation on US forests*

M.S., Industrial Engineering and Operations Research

May 2017

University of Missouri, Columbia, MO

- Thesis: *Alternative methods for calculating optimal safety stock levels*

B.S., Industrial Engineering

February 2010

Azad University, Arak, Iran

EXPERIENCE

Data Scientist

December 2021 - present

Ford Motor Company, Dearborn, MI

- Conduct research in the area of supply chain focusing on forecasting semiconductor chips shortages
- Investigate forecasting future suppliers' shipments for early identification of chips shortages
- Develop data analytical projects in Python utilizing machine learning and high-performance computing

Cyberinfrastructure Engineer

January 2020 - December 2021

Research Computing Support Services, University of Missouri, Columbia, MO

- Supported researchers to enable utilizing a high-performance computing (HPC) cluster
- Developed *Sbox*: a Python toolbox for facilitating users' interactions with HPC clusters

Graduate Research Assistant

January 2016 - December 2021

University of Missouri, Columbia, MO

- Studied optimal level of woody biomass production with minimum environmental costs on US forests
- Performed statistical analysis in R to estimate the impact of woody biomass production on forests
- Developed a Python API for accessing Forest Inventory and Analysis (FIA) database in parallel
- Conducted research to improve forecasting safety stock levels for Anheuser-Busch supply chain

Intern Research Assistant

June 2019 - August 2019

Resources for the Future, Washington, DC

- Conducted research on environmental implications of woody biomass co-firing at US power plants
- Developed a Python application to collect the woody biomass availability across US counties

COMPUTING

- *Programming*: Python, R, Bash, SQL
- *HPC Clusters*: Linux, Slurm, Spack, Singularity
- *Cloud computing*: Google Cloud Platform, Kubernetes, Terraform
- *Optimization*: GAMS, Gurobi
- *Libraries*: PySpark, SQLite, Pandas, Shapely, Sphinx, Numba, nlme, plm, ggplot2, sf, parallel
- *Miscellaneous*: Git, Docker, Conda, Poetry, JupyterLab, Emacs, Markdown, Regular expression

PUBLICATIONS

- **Mirzaee, Ashkan**, Ronald G. McGarvey, and Francisco X. Aguilar. “Optimal level of biopower generation and its environmental impacts.” (In progress)
- **Mirzaee, Ashkan**, Ronald G. McGarvey, Francisco X. Aguilar, and Erin M. Schliep. “Impact of biopower generation on eastern US forests.” *Environment, Development and Sustainability* (2022)
- Picciano, Paul, Francisco X. Aguilar, Dallas Burtraw, and **Ashkan Mirzaee**. “Environmental and socio-economic implications of woody biomass co-firing at coal-fired power plants.” *Resource and Energy Economics* (2022)
- Aguilar, Francisco X., **Ashkan Mirzaee**, Ronald G. McGarvey, Stephen R. Shifley, and Dallas Burtraw. “Expansion of US wood pellet industry points to positive trends but the need for continued monitoring.” *Nature: scientific reports* (2020)
- **Mirzaee, Ashkan**, and Mohamed Awwad. “Shortest Path Algorithm in the Presence of Polyhedral Forbidden Regions.” In IIE Annual Conference. Proceedings. *Institute of Industrial and Systems Engineers* (2017)
- **Mirzaee, Ashkan**. “Alternative methods for calculating optimal safety stock levels.” *University of Missouri-Columbia* (2017)

PRESENTATIONS

- Impact of biopower generation on US forests, INFORMS Annual Meeting, Anaheim, CA (2021)
- A Python API for accessing Forest Inventory and Analysis database in parallel, PEARC21 (2021)
- Impact of increased biomass electricity generation on forest health, INFORMS Annual Meeting (2020)
- CO₂ Emissions reduction by identifying optimal level of co-firing biomass in coal-burning power plants, INFORMS Annual Meeting, Seattle, WA (2019)
- Woody biomass use for biopower and its impact on forest resources, INFORMS Annual Meeting, Phoenix, AZ (2018)
- Shortest path algorithm in the presence of polyhedral forbidden regions, IISE Annual Conference, Pittsburgh, PA (2017)
- Calculating optimal safety stock levels, CELDi Conference, Columbia, MO (2016)
- Alternative methods for calculating optimal safety stock levels, CELDi Conference, Atlanta, GA (2016)

AFFILIATIONS AND AWARDS

- Software Carpentry Trainer
- XSEDE Student Champions
- US Research Software Engineer Association
- Alpha Pi Mu, Industrial Engineering Honor Society
- Institute for Operations Research and the Management Sciences (INFORMS)
- Innovative Design Competition, 1st place award (\$1,500), IISE Annual Conference (2017)
- Mizzou Advantage Graduate Award (\$600), University of Missouri (2017)
- Outstanding IMSE Masters Student Award, University of Missouri (2017)
- GIA Award Scholarship (\$10,000), University of Missouri (2017)
- Graduate Professional Council, Student Affairs Committee, August (2016)