Ashkan Mirzaee

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Education

Ph.D., Industrial Engineering and Operations Research *December 2021*
Minor: Statistics
University of Missouri, Columbia, MO

- Advisor: Dr. Ronald G. McGarvey

M.S., Industrial Engineering and Operations Research *May 2017*
University of Missouri, Columbia, MO

B.S., Industrial Engineering *December 2010*
Azad University, Arak, Iran

Experience

Graduate Research Assistant *February 2016 - present*
University of Missouri, Columbia, MO

- Estimating optimal level of biomass production to maintain its sustainability constraints
- Forecasting level of biomass production and its impacts on forest resources in the long-term
- Performed statistical analysis to estimate the impact of woody biomass demand on US forests
- Developed a Python API for accessing Forest Inventory and Analysis (FIA) database in parallel
- Conducted research and data analysis for improving demand forecasting methods

Cyberinfrastructure Engineer *January 2020 - present*
Research Computing Support Services, University of Missouri, Columbia, MO

- Supporting researchers to facilitate scientific workflows on a HPC cluster
- Providing documentation and training to enable research productivity
- Installing and maintaining software on Linux systems in support of high performance computing

Intern Research Assistant *June 2019 - August 2019*
Resources for the Future, Washington, DC

- Collaborated to include biopower generation to the RFF's electricity market model
- Created a Python web scraping program to collect data for woody biomass availability across US

Industrial Engineering Operations Specialist *March 2016 - December 2016*
EternoGen Aesthetics, Columbia, MO

- Built and maintained database for procurement and inventory management system
- Performed statistical analysis and collaborated to meet ISO 13485 compliance

Graduate Teaching Assistant *January 2015 - January 2016*
University of Missouri, Columbia, MO

- Teaching assistant for several courses including Engineering Statistic and Energy Efficiency

Computing

Python, R, Bash, SQLite, GAMS, Git, Slurm, Spack, Conda, Vagrant, Singularity, HPC Clusters, Linux Administration, Emacs, Markdown, JupyterLab

Publications

- Mirzaee, A., McGarvey, R.G., Aguilar, F.X. et al. Multi objective optimization for identifying level of bioenergy generation in coal burning power plants (*in progress*).
- Picciano, P., Burtraw, D., Aguilar, F.X. & Mirzaee, A. Environmental and Socio-Economic Implications of Woody Biomass Use for Biopower Co-firing (*under review*).
- Mirzaee, A., McGarvey, R.G., Aguilar, F.X. et al. Impact of increased biopower generation on US forests (*under review*).
- Aguilar, F.X., Mirzaee, A., McGarvey, R.G. et al. Expansion of US wood pellet industry points to positive trends but the need for continued monitoring. Sci Rep 10, 18607 (2020).
- Mirzaee, A. & Awwad, M. Shortest path algorithm in the presence of polyhedral forbidden regions. in 67th Annual Conference and Expo of the Institute of Industrial Engineers 2017 (2017).
- Mirzaee, A. Alternative methods for calculating optimal safety stock levels. University of Missouri (University of Missouri-Columbia, 2017).

Presentations

- Impact of biopower generation on US forests, INFORMS Annual Conference, October 2021, Anaheim, CA (*accepted*)
- A Python API for accessing Forest Inventory and Analysis database in parallel, PEARC21, July 2021, virtual (*accepted*)
- Impact of increased biomass electricity generation on forest health, INFORMS Annual Conference, November 2020, virtual
- CO_2 Emissions reduction by identifying optimal level of co-firing biomass and natural gas in coal-burning power plants, INFORMS Annual Conference, October 2019, Seattle, WA
- Woody biomass use for biopower and its impact on forest resources, INFORMS Annual Conference, November 2018, Phoenix, AZ
- Shortest path algorithm in the presence of polyhedral forbidden regions, IISE Annual Conference, May 2017, Pittsburgh, PA
- Calculating optimal safety stock levels, CELDi Conference, October 2016, Columbia, MO
- Alternative methods for calculating optimal safety stock levels, CELDi Conference, April 2016, Atlanta, GA

Attended Workshops

- The ACM PEARC21 virtual student program, July 2021 (*accepted*)
- GPN: Doing Genomics in the Cloud, June 2021
- Software Carpentry Instructor Training, December 2020
- XSEDE: Big Data and Machine Learning, August 2020
- XSEDE: Python and Performance, July 2020
- Spack Tutorial on AWS, July 2020
- PEARC20: Building Better Scientific Software in Python, July 2020
- PEARC20 Workshop: Introduction to Numpy, July 2020

- PEARC20: Deep Dive into Constructing Containers for Scientific Computing, July 2020
- XSEDE: Summer Boot Camp, June 2020
- XSEDE: MPI, May 2020

Affiliations and Awards

- Software Carpentry Trainer
- XSEDE Student Champions
- Alpha Pi Mu, Industrial Engineering Honor Society
- Institute for Operations Research and the Management Sciences (INFORMS)
- Institute of Industrial and Systems Engineers (IISE)
- Graduate Professional Council, Student Affairs Committee, August 2015 - August 2016
- Innovative Design Competition, 1st place award ($1,500), IISE Annual Conference, May 2017
- Mizzou Advantage Graduate Award ($600), University of Missouri, April 2017
- Outstanding IMSE Masters Student Award, University of Missouri, March 2017
- GIA Award Scholarship ($10,000), University of Missouri, January 2017