Anthony DiGiovanni

Research Interests

Reinforcement learning; Markov games; statistical learning theory; artificial intelligence safety

Education

2019–present **Ph.D. Statistics**, *University of Michigan*, Ann Arbor, MI.

2015–2019 **B.S. Computational and Applied Mathematics**, *The University of Chicago*, Chicago, IL.
GPA: 3.83

Publications

1. **DiGiovanni, A.**, Demanelis, K., Tong, L., Argos, M., Shinkle, J., Jasmine, F., Sabarinathan, M., Rakibuz-Zaman, M., Sarwar, G., Islam, M. T., Shahriar, H., Islam, T., Rahman, M., Yunus, M., Graziano, J., Gamble, M. V., Ahsan, H., Pierce, B. L. (2020) "Assessing the impact of arsenic metabolism efficiency on DNA methylation using Mendelian randomization," *Environmental Epidemiology*, 4 (2), e083.

Teaching

2019–2020 **Graduate Student Instructor**, *University of Michigan*, Ann Arbor, MI.
- STATS 250: Introduction to Statistics & Data Analysis (Winter 2020)
  - Weekly conceptual lab for 25 students, 1.5 office hours, homework and exam grading
- STATS 280: Honors Introduction to Statistics & Data Analysis (Fall 2019)
  - Weekly R programming lab for 34 students, 3 office hours, homework and exam grading

2018 **Teaching Assistant**, *The University of Chicago*, Chicago, IL.
- MATH 13200: Elementary Functions and Calculus II (Winter 2018)
  - Two weekly problem sessions for 10 students, homework grading

Work Experience

2019 **Research Intern**, *Wild Animal Initiative*, Remote.
- Developed and implemented matrix population models in Python for the analysis of predator-prey dynamics, density-dependent growth, and changes in age structure.
- Wrote scripts for querying an ecological database.
- Wrote a software user guide and demonstration/methods section explaining the advantages of a new matrix population model framework, including greater biological realism and utility for quantifying animal demography.

2018–2019 **Research Assistant**, *The University of Chicago*, Chicago, IL.

- ○ Wrote R scripts for processing and organization of public health data, as well as statistical analyses such as multivariate regression, causal inference tests, mediation analysis, gene-environment interaction analysis, and Mendelian randomization.
- ○ Developed machine learning models in Python and R for prediction of aging outcomes based on biomarkers.
- ○ Reviewed literature in epidemiology, genomics, and statistics to assist data interpretation and methodology.

Awards

2020–2021 Research Grant, Center on Long-Term Risk

2018–2019 College Research Fellows Program, The University of Chicago

2018 Public Health Sciences Summer Fellowship, The University of Chicago

Computing Skills

Python, R