Dylan Murphy

Tucson, AZ
(520) 328-4272 • dylan@cotangent.space
GitHub: mpdylan

Profile

- Quantitative scientist with a strong foundation in theoretical and computational mathematics, specializing in model-centered inference and prediction, uncertainty quantification, and principled Bayesian estimation.

Experience

- **Tampa Bay Rays** **St. Petersburg, FL**
  Analyst, Baseball Research and Development *2022 – present*
  - Developed forecasting models for player performance evaluation and prediction to improve personnel decision-making for a Major League Baseball team.
  - Authored reports and delivered presentations on analytics products for audiences at a mixed technical level.
  - Maintained, optimized, and upgraded internal information systems.
- **University of Arizona School of Information** **Tucson, AZ**
  Lecturer *2017 – 2021*
  - Taught courses in Bayesian modeling, information theory, and machine learning at the advanced undergraduate and graduate level.
  - Developed new courses for in-person and remote instruction, and administered online services such as JupyterHub to assist in online instruction for courses taught in R and Python.
  - Contributed to research in multi-lingual OCR software supported by the National Endowment for the Humanities. Developed software for outline-based feature extraction and implemented novel recurrent neural network architectures in Keras.
  - Managed teams of undergraduate TAs in running lab sections and developing new instructional material for introductory and advanced undergraduate courses in Python programming and machine learning.
  - Advised undergraduate capstone projects in statistics and machine learning.
- **University of Arizona Department of Mathematics** **Tucson, AZ**
  Ph.D. Student and Graduate Instructor *2010 – 2019*
  - Taught courses in algebra, calculus, and introductory statistics.
  - Taught summer sessions for graduate students to prepare for qualifying exams in geometry and topology.
  - Organized weekly colloquium sessions for graduate students to present research and expository talks in a low-pressure environment.
  - Performed research in mathematical physics, including implementation of numerical simulation software in Python and Julia.

Education

- **University of Arizona** **Tucson, AZ**
  Ph.D., Mathematics *2019*
- **University of Chicago** **Chicago, IL**
  S.B., Mathematics, Physics *2010*

Core Technical Skills

Programming Languages: Python (with PyMC3, Keras, NumPy, and scikit-learn), R, Stan, Julia, LaTeX, SQL
Computing environments: Linux (Ubuntu, Arch), VPS and cloud computing (DigitalOcean, AWS)
Other software: Git