Garrett Frady

Contact Information

305 Storrs Road
Mansfield Center, CT 06250
518-578-8822

garrett.frady@uconn.edu
https://garrett-frady.github.io/
https://www.linkedin.com/in/garrett-frady/

Research Interest

Combine my assortment of skills obtained through my degrees in math and computer science to develop accurate and efficient Bayesian feature extraction, estimation, and prediction methods with novel application related to public health concerns surrounding mental-related illnesses.

Education

University of Connecticut — Expected Graduation: May 2024
Ph.D. in Statistics — *Storrs, CT*
- Qualifying Exam and General Exam Cleared
- Advisor: Dipak K. Dey

State University of New York at Potsdam — Date Graduated: May 2019
B.A./M.A. in Mathematics and B.A. in Computer Science — *Potsdam, NY*
- Math Master's thesis: Jordan and Rational Canonical Forms of matrices
- Math Master's Advisor: Cornelia Yuen

Clinton Community College — Date Graduated: May 2016
A.S. Math and Science — *Plattsburgh, NY*

Research Experience

Doctoral Researcher — January 2021 - Present
Department of Statistics, University of Connecticut — *Storrs, CT*
- Conduct in depth literature review on modeling high dimensional spatio-temporal data
- Explore dimension reduction techniques to reduce computational burden
- Develop Bayesian feature extraction methods to analyze functional connectivity between brain regions
- Formulate subject-level prediction processes to classify subjects as at risk of chronic alcohol exposure

Statistical Consultant — July 2022 - Present
Statistical Consulting Services, University of Connecticut — *Storrs, CT*
- **Improving Firefighter Navigation with Haptic Feedback**
  - Methodology: Binary logistic regression mixed-effects models
  - Used In: Future Research Publication
  - Primary Contact: Andrew E. Salter, Ph.D. Candidate (Dept. of Biomedical Engineering)
- **Comparing Outcomes in High-Risk Populations Before and After Adjusting Allocation and Prioritization of Organ Transplants**
  - Methodology: Multiple imputation by Fine and Gray competing risk models
  - Used In: Future Research Publication
  - Primary Contact: William L. Baker, Pharm.D. (Assoc. Prof., Dept. of Pharmacy Practice)
- **Bidirectional Relationship Between Food Security and Smoking**
  - Methodology: Cross-lagged panel models with covariates
  - Used In: Future Research Publication
  - Primary Contact: Jon Phillips, Ph.D. (Assist. Prof., UConn School of Social Work)
- **Analyzing the Impact of Pacemaker Status on the Survival of Heart Transplant Patients**
  - Methodology: Survival analysis utilizing multi-state modeling of time-to-event data
  - Used In: Future Research Publication
  - Primary Contact: Cesar Rodrigo Zoni, Postdoctoral Researcher (UCONN Health)

Teaching Experience

Primary Instructor May 2021 - Present

Department of Statistics, University of Connecticut *Storrs, CT*

- Courses:
  Introduction to Statistics: Summer 2021-2022, Fall 2022-2023, Spring 2024
  Elementary Concepts of Statistics: Fall 2023
  Introduction to Mathematical Statistics II: Spring 2022
- Prepared lecture notes, complementary material, and course activities for up to 285 students
- Created and evaluated course assessments and review sessions to promote successful learning habits

Teaching Assistant August 2019 - Present

Department of Statistics, University of Connecticut *Storrs, CT and Hartford, CT*

- Taught sections on Minitab software and introduction statistics material
- Held group discussions, set up review session, and planned lessons to emphasize course concepts
- Grade assignments, proctor exams, offer additional support for students

Other Experience

Mathematics/Statistics Tutor January 2022 - Present

Student Athlete Success Program, University of Connecticut *Storrs, CT*

- 60-minute 1-on-1 weekly sessions with student athletes
- Reiterate concepts, demonstrate procedures through examples, prepare study plans

Statistics Tutor August 2019 - May 2021

Department of Statistics, University of Connecticut *Storrs, CT*

- Review course notes and exam preparation for individuals in undergraduate statistics courses

Statistical Research Mentor May 2023 - Current

Lumiere Education *Remote*

- Advise students through the publication of a research paper over a 12-week program
- Introduce effective research tactics, enhance statistical programming and analytical skills

R Workshop Instructor November 2022

University of Connecticut *Storrs, CT*

- Ran a 2-hour introduction to R workshop for students from disciplines outside of statistics
- R Studio interface, data manipulation, data visualization, regression, interpreting results

Awards & Honors

Outstanding Performance in Teaching Award September 2023

Department of Statistics at The University of Connecticut

- Award for exceptional effort and dedication to teaching

Certification of Appreciation for Services to the Department September 2023

Department of Statistics at The University of Connecticut

- Award for volunteer work in the department

3rd Place Poster Award June 2022

International Society for Bayesian Analysis World Meeting

- Award for the work I presented at the conference; out of nearly 200 submissions

Institute of Brain and Cognitive Sciences Affiliate March 2021 - Present

University of Connecticut

- Research affiliate with the brain and cognitive sciences program at UConn

Conference Participation Award Jan. 2023
University of Connecticut
- Award from the graduate school for presenting my work at conferences

Teaching Award Fall 2020
University of Connecticut
- Award from the Graduate School for excellence in teaching

Research Presentations

International Society for Bayesian Analysis World Meeting June 2022
Montreal, Quebec, Canada
- Feature Extraction Performance of the GD Prior in High Dimensional Spatio-Temporal Data

Joint Statistical Meetings August 2022
Washington D.C.
- Bayesian Feature Extraction Using the GD Prior Applied to High Dimensional Spatio-Temporal Data

Eastern North American Region Spring Meeting March 2023
Nashville, TN
- Performance of the GD Prior in Feature Extraction with Application to Electroencephalography Data

Publications

1. **Frady, G.**, Dey, D. K., Mohammed, S. (2024). Gaussian and Diffused-Gamma Feature Extraction Applied to Sparse High Dimensional Spatio-Temporal Data by Local Modeling. *Biometrics*. (Submitted)

2. **Frady, G.**, Dey, D. K., Mohammed, S. (2024). Bayesian Feature Extraction Using Spatio-Temporally Structured Gaussian and Diffused-gamma Prior. (Under Preparation)

3. Baker, W. L., Sharma, M., Cohen, A., Ouwens, M., Christoph, M. J., Koch, B., Moore, T. E., **Frady, G.**, Coleman, C. I. (2023). Using 30-day modified rankin scale score to predict 90-day score in patients with intracranial hemorrhage: derivation and validation of prediction model. *PLOS ONE*. (Under Review)

Programming Languages and Software

- **R**: competent through statistical programming for research and consulting projects
- **Python**: proficient through computer science degree, machine learning coursework, mentoring
- **Git**: proficient through building R packages and websites, collaborating on projects
- **Matlab, Stata, SPSS, SAS**: advanced beginner through consulting projects and coursework

References

Dipak K. Dey, Board of Trustees Distinguished Professor
Department of Statistics
University of Connecticut
(860) 486-4755, dipak.dey@uconn.edu

Shariq Mohammed, Assistant Professor
Department of Biostatistics
Boston University
(617) 358-2518, shariqm@bu.edu

Timothy E. Moore, Director of Statistical Consulting Services
Center for Open Research Resources and Equipment
University of Connecticut
(860) 634-4418, timothy.e.moore@uconn.edu