Federica Zoe Ricci

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Research Interests

Bayesian Statistics	Statistical Machine Learning	Network Analysis
Probabilistic Clustering	Statistics and Data Science Education	

Education

PhD, Statistics   May 2025 (expected)
University of California, Irvine
Advisors: Erik Sudderth and Michele Guindani
Dissertation: "Advances in Bayesian methods for sparse network analysis and
time-series biclustering"

MSc, Economic and Social Sciences   2019
Bocconi University
Thesis Advisor: Antonio Lijoi
Thesis: "Sticky hierarchical Pitman-Yor process as prior for hidden Markov models"

BSc, Economics and Management for Arts, Culture and Communication   2015
Bocconi University
Thesis (Anthropology, with Ugo Fabietti): "Building social ties: gift exchange in contemporary art"

Publications

PEER-REVIEWED

Ricci, F.Z., Medina, C.M. and Dogucu, M. (2024). "Automated grading workflows for providing personalized feedback to open-ended data science assignments". *Technology Innovations in Statistics Education*, 15 (1).

Ricci, F.Z., Guindani, M. and Sudderth, E.B. (2022). "Thinned random measures for sparse graphs with overlapping communities". *Advances in Neural Information Processing Systems* 35, 38162-38175

Migliavada, R., **Ricci, F.Z.**, Denti, F., Haghverdian, D. and Torri, L. (2022). "Is purchasing of vegetable dishes affected by organic or local labels? Empirical evidence from a university canteen". *Appetite* 173, 105995

Migliavada, R., **Ricci, F.Z.** and Torri, L. (2021). "A three-year longitudinal study on the use of pre-ordering in a university canteen". *Appetite* 163, 105203

UNDER REVISION

Ricci, F.Z., Sudderth, E.B., Lee, J., Peters, M.A.K., Vannucci, M. and Guindani, M. (2024+). "Bayesian temporal biclustering with applications to multi-subject neuroscience studies". *arXiv preprint arXiv:2406.17131*

Dogucu, M., Demirci, S., Bendekgey, H., **Ricci, F.Z.** and Medina, C.M. (2024+). "Undergraduate data science education: Who has the microphone and what are they saying?". *arXiv preprint arXiv:2403.03387*

IN PREPARATION

Ricci, F.Z., Micheletti D., Guindani, M. and Sudderth, E.B. (2024+). "Sparse and scalable mixed membership stochastic blockmodels for network analysis".

Ricci, F.Z. and Dogucu, M. (2024+). "See you at the posterior line: teaching Bayesian modeling with an online racing game".

Migliavada, R., Ricci, M., Garavelli, G., **Ricci, F.Z.** and Torri, L. (2024+). "The way calories are communicated may not affect calorie intake: evidence from an online experiment".

Presentations

Bayes BATS: a program for advancing Bayesian thinking in STEM education
- Contributed talk, *Joint Statistical Meetings* — Portland (OR), Aug 2024

Bayesian temporal biclustering with applications to multi-subject neuroscience studies
- ★ Invited talk, *International Society for Bayesian Analysis (ISBA) World Meeting* — Venice (Italy), Jul 2024
- ★ Invited talk, *Colloquium of Department of Mathematics and Statistics* — University of West Florida, Mar 2024
- Best poster award (1st classified), *Biomedical Data Science Workshop* — UC Irvine, Feb 2024

See you at the Posterior Line: teaching Bayesian modeling with a racing game
- Poster presentation, *Bayesian Young Statistician Meeting* — Venice (Italy), Jun 2024
- Poster (video presentation), *Electronic Conference on Teaching Statistics (eCOTS)* — online, Jun 2024

Building Data Science Education Research Plan for Teacher-Scholar
- Breakout Session (voted "hot topic of the day"), *eCOTS* — online, Jun 2024

Automate your grading workflow with gradetools: a grading assistant in RStudio
- Workshop, *United States Conference on Teaching Statistics* — State College (PA), May 2023
- ★ Invited workshop, *Researchers of Statistics Education Conference* — online, May 2023

Thinned random measures for sparse networks with overlapping communities
- ★ Invited talk, *International Day of Women in Statistics and Data Science* — online, Oct 2022
- Poster presentation, *Objective Bayes Conference* — UC Santa Cruz, Sep 2024
- Poster award in Bayesian Nonparametrics, *ISBA World Meeting* — Montreal (Canada), Jul 2024

Teaching Experience

Teaching Assistant, *UC Irvine*
Led discussion (lab) sessions with up to 50 students, wrote homework and exams, managed virtual discussion forums (Canvas and Piazza), held weekly office hours.

- STATS 8 - Introduction to Biological Statistics — Fall 2021
- STATS 68 - Statistical Computing and Exploratory Data Analysis — Spring 2021
- STATS 67 - Introduction to Probability and Statistics for Computer Science — Winter 2021
- STATS 7 - Basic Statistics — Summer, Winter, Fall 2020 / Spring 2020

Guest Instructor, *UC Irvine* — Winter 2024
Designed and taught "See you at the posterior line: a game-based activity for the Beta-Binomial model" for STATS 115 - Introduction to Bayesian Data Analysis.

Workshop Instructor, *UC Irvine*
Designed and taught scientific writing workshops for a total of 70 undergraduate and 20 graduate students.

- Writing a data analysis paper — Summer 2023, 2024
  Irvine Summer Institute in Biostatistics and Undergraduate Data Science
- Writing a honors thesis — Spring 2024
  School of Information and Computer Science
- Preparing for the data analysis qualifying exam — June 2023
  Department of Statistics

Program Assistant, *Bayes BATS program for the advancement of Bayesian Thinking in STEM*

- Supported development of material and instruction of summer bootcamp for undergraduate STEM instructors. — July 2023
- Mentored Dr. P. Toledo with developing materials for introducing frequentist and Bayesian methods in parallel to undergraduate students in Economics. — 2023 - present

Participant of Preparing to Teach Statistics and Data Science Workshop, *Corvallis (OR)*   August 2024

Selective, fully-funded workshop organized by the Section on Statistics and Data Science Education of the American Statistical Association to prepare for undergraduate-focused faculty roles.

Graduate Fellow of Division of Teaching Excellence and Innovation, *UC Irvine*   Summer 2020

Advanced pedagogical training with emphasis on remote learning from Division of Teaching Excellence and Innovation (DTEI).

Undergraduate Research Mentoring

Irvine Summer Institute in Biostatistics and Undergraduate Data Science   Summer 2024

Mentored team of four undergraduate students studying the impact of stigma and displacement on mental-health outcomes among sexual minority men in Ukraine.

Mentoring Excellence Program, *UC Irvine*   Fall 2024

Completed 5-week training on: building a mentoring relationship; conflict resolution; mentoring across differences; communication and interpersonal relationships; mentoring and academic wellness.

Service

Statistics Brown Bag seminar series, *UC Irvine*   2021 - present

Founded and led the organization of bimonthly seminars for promoting graduate students' professional development (research fairs, workshops, faculty showcase).

Pacific Alliance for Low-income Inclusion in Statistics and Data Science   2023-24

Mentored undergraduate student who transferred from community college to Data Science Bachelors at UC Irvine.

Associate Editor, *Teaching Bayes* **section**   2024 - present

Quarterly Bulletin of *International Society for Bayesian Analysis*

Reviewer

- Conference: *Artificial Intelligence and Statistics*   2023 , 2024
- Journal: *Computational Statistics and Data Analysis*   2023

Competition Judge

- Undergraduate Class Project Competition   Winter & Summer 2024
  Consortium for the Advancement of Undergraduate Statistics Education, American Statistical Association
- Data Visualization Poster Competition   Spring 2024
  K-12, American Statistical Association

Awards

HPI Fellowship for Machine Learning and Data Science, *UC Irvine*   2022 - present

Outstanding Qualifying Exams (Newcomb Award), *UC Irvine*   2020

Outstanding Teaching Assistant Award (Honorary Mention), *UC Irvine*   2020

Dean's Recruitment Fellowship, *UC Irvine*   2019

Graduate Fellow, IGIER-BIDSA Research Centers, *Bocconi University*   2017-19

Certifications

CITI Basic HRP Course for Social and Behavioral Investigators   Fall 2023

Professional Memberships

Institute of Mathematical Statistics	American Statistical Association	International Society for Bayesian Analysis

References

Erik Sudderth, UC Irvine
Professor of Computer Science and Statistics, Chancellor Fellow
sudderth@uci.edu

Michele Guindani, UC Los Angeles
Professor of Biostatistics
mguindani@ucla.edu

Mine Dogucu, UC Irvine
Associate Professor of Teaching and Vice Chair of Undergraduate Studies
mdogucu@uci.edu

Volodymyr Minin, UC Irvine
Professor of Statistics
vminin@uci.edu