

RYAN R. ROSARIO, PH.D.

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Education

- Ph.D., *Statistics*** 2017
UNIVERSITY OF CALIFORNIA, LOS ANGELES
Specialization: Machine Learning, Natural Language Processing, Data Mining
Dissertation Title: A Data Augmentation Approach for Short Text Classification
Advisors: Yingnian Wu, Jan de Leeuw
Committee Members: Arash Amini, Junghoo Cho
- M.S., *Computer Science*** 2010
UNIVERSITY OF CALIFORNIA, LOS ANGELES
Specialization: Database Systems, Big Data Computing
Advanced coursework includes: Data Mining, Machine Learning Theory, Advanced Databases, Probabilistic Programming.
Committee Members: D. Stott Parker (advisor), Junghoo Cho, Michael G. Dyer
- M.S., *Statistics*** 2008
UNIVERSITY OF CALIFORNIA, LOS ANGELES
- B.S., *Mathematics of Computation, Statistics*** 2006
UNIVERSITY OF CALIFORNIA, LOS ANGELES
Graduated with Latin Honors, College Honors, Departmental Honors.

Teaching Experience

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Lecturer

Henry Samueli School of Engineering and Applied Science

Department of Computer Science

2018–Present

- Designed and delivered lectures for courses including Computer Science 143 (Data Management Systems formerly Database Systems), Computer Science 144 (Web Applications), and Computer Science 134 (Distributed Systems), with enrollments up to 300 students.
- Managed 2–6 teaching assistants and maintained course records for both on-campus and MSOL sections.
- Developed and delivered engaging new content on NoSQL, Spark, Distributed Systems, Lambda Architecture, Streaming Systems, DuckDB, and vector databases (CS 143).
- Served as instructor of record for resurrected courses in Web Applications course (CS 144) and Distributed Systems (CS 134) after a three-year and four-year hiatus respectively.
- Mentored two undergraduate students via the Undergraduate Student Initiated Education program who led courses in Introduction to Artificial Intelligence Ethics and Understanding Technology in Modern Society.
- Served as capstone advisor to three M.S. students and capstone committee member for four M.S. students.
- Served as advisor of record for Google Developer Student Club.
- Utilized vast industry experience as a software engineer and data scientist to balance theory with best practices.
- Consistently received high teaching effectiveness scores.

Masters of Science Online (MSOL) Program

2022–Present

- Designed and delivered asynchronous version of Computer Science 143 (Data Management Systems) for working professionals.
- Developed tailored assessment strategies addressing unique needs of remote graduate students balancing full-time careers.
- Created comprehensive suite of lecture recordings, interactive forums, and supplemental materials optimized for online learning.
- Orchestrated flexible examination schedule across multiple time zones, managing remote proctoring system.
- Collaborated with IT to implement robust technical infrastructure supporting seamless remote learning experience.

Anderson School of Management

Masters of Science in Business Analytics (MSBA) Program

2022–Present

- Designed and delivered MGMTMSA 402 (SQL and Data Management), an accelerated five-week course, to over 100 graduate students across multiple sections (2022–2024).
- Created comprehensive Data Management curriculum for 130+ graduate students, emphasizing practical applications in business analytics.
- Developed industry-focused coursework balancing technical foundations with real-world data challenges for students of diverse technical backgrounds.
- Designed innovative assignments integrating both technical skills and data intuition essential for analytics careers.
- Mentored students through summer capstone projects and provided mock interview coaching for data scientist positions.

HOWARD UNIVERSITY

Instructor of Record

Spring 2019

Via Google Tech Exchange Program

- Designed comprehensive Data Science curriculum integrating R programming, data visualization, statistical modeling, and quantitative reasoning to meet Howard University requirements.
- Created culturally relevant content and teaching materials tailored for students from historically underrepresented groups in tech.
- Delivered in-person lectures at Google campus while concurrently maintaining full-time engineering role and UCLA teaching duties.
- Provided technical mentorship and interview preparation, resulting in three students securing software engineering positions at Google.

Relevant Industry Work Experience

GOOGLE, LLC

Google Cloud, Google Kubernetes Engine (GKE)

Software Engineer

2023–Present

- Led implementation of LeaderWorkerSet, an open-source deployment strategy for Kubernetes and GKE that enhances reliability of stateful applications across distributed systems.
- Developed comprehensive testing framework to validate concurrent and distributed system behaviors, focusing on scalability and fault tolerance.
- Collaborated with open-source community and cross-functional teams to design, document and optimize deployment patterns.

- Developed rigorous statistical methodology, hypothesis tests, and experiments to evaluate the impact of changes to ranking machine learning algorithms and new search features.
- Led efforts to develop new experimental methodology for improving user trust, including features that warn users about potentially unhelpful or misleading search results.
- Spearheaded initiatives leveraging state-of-the-art natural language processing algorithms to understand and predict various aspects of page quality, resulting in millions of dollars in annual cost savings.
- Served as the lead technical expert on a diagnostic system for identifying inconsistent and malicious behavior in human judgment ratings used to measure page quality across Google Search.
- Developed an automated standardized testing program using psychometrics and item response theory to assess human rater competency.

FACEBOOK, INC. (NOW META PLATFORMS)

Enterprise Engineering

Quantitative Engineer (Machine Learning Engineer)

2013–2015

- Architected and implemented company-wide sentiment analysis system, establishing it as the enterprise standard and presenting the technical framework at PyData 2014.
- Built distributed text classification system using Latent Dirichlet Allocation, enabling automated categorization and summarization of large-scale text data.
- Leveraged sentiment analysis insights to optimize user targeting strategies, directly contributing to retention of multimillion-dollar advertising partnership.
- Led technical mentorship program for new Quantitative Engineers and interns, focusing on practical machine learning applications for IT automation.

Publications and Presentations

WORKING MANUSCRIPTS

Rosario, R. R. (2024). *Automatic evaluation of student assessment using generative AI*. Unpublished manuscript, Department of Computer Science, University of California, Los Angeles.

Rosario, R. R. (2023). *Modern data management systems*. Unpublished textbook, Department of Computer Science, University of California, Los Angeles.

DISSERTATION

Rosario, R. R. (2017). *A data augmentation approach to short text classification*. [Doctoral dissertation, University of California, Los Angeles]. ProQuest.

PEER-REVIEWED PUBLICATIONS

Agapie, E., Chen, G., Houston, D., Howard, E., Kim, J., Mun, M., Mondschein, A., Reddy, S., Rosario, R., Ryder, J., Steiner, A., Burke, J., Estrin, D., Hansen, M., & Rahimi, M. (2008). *Seeing our signals: Combining location traces and web-based models for personal discovery*. In Proceedings of the 9th Workshop on Mobile Computing Systems and Applications (pp. 6–10). ACM.

BOOK REVIEWS

Rosario, R. R. (2009). Practical Text Mining with Perl. *Journal of Statistical Software, Book Reviews*, 29(9), 1–3. <https://doi.org/10.18637/jss.v029.b09>

CONFERENCE PRESENTATIONS

Rosario, R. R. (2014, May 2–4). *Sentiment classification using scikit-learn* [Conference presentation]. PyData 2014 Silicon Valley, Menlo Park, CA, United States.

Christou, N., Rosario, R. R., & Dinov, I. (2010, July 20–23). *Technology-enhanced probability and statistics education using SOCR* [Conference presentation]. MERLOT 2010 International Conference, San Jose, CA, United States.