MELDA COSKUN, PhD

Senior Statistics and Modeling Expert, Data Science

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LinkedIn | Portfolio

Professional Summary

Senior Statistics and Data Science Expert with over 9 years of experience in developing and implementing statistical models and predictive analytics solutions. Proficient in transforming complex datasets into actionable insights that drive strategic decision-making. Adept at delivering high-quality consulting services and collaborating with clients to meet their specific needs.

Relevant Skills

- **Statistical Tools and Statistical Software**: Mixed-effects models, regression analysis, Bayesian statistics, SPSS
- **Predictive Analytics**: Model development and validation, machine learning techniques.
- **Data Analysis and Programing Languages**: Large datasets, R, Python, SQL.
- **Data Visualization**: Tableau, Power BI, R Shiny.
- **Client Consulting**: Client management, customized statistical solutions.
- **Technical Documentation**: Reporting, clear communication of methodologies.
- **Analytical Skills**: Causal analysis, variance reduction, problem-solving.
- **Project Management**: Agile methodologies, Jira, multitasking.

Education

- **PhD in Cognitive Science of Language**
  McMaster University, Canada | June 2022
- **MSc in Cognitive Science**
  Middle East Technical University, Turkey | June 2014
- **BSc in Computer Education and Instructional Technology**
  Baskent University, Turkey | June 2009

Work Experience

Quantitate User Researcher & Data Scientist

CBC/Radio-Canada & McMaster University, Canada | Apr 2023 – Present

- Conducted a quantitative user research using eye-tracking data and surveys to assess the impact of new technologies on language comprehension. Analyzed large language datasets to provide actionable insights and enhance user experience.
- Engaged with stakeholders to understand their expectations and identify key areas for design improvement.
- Applied advanced statistical analysis and machine learning techniques to uncover key insights from large datasets, including mixed effects modeling, predictive models, and trend analysis.

- Created 20+ intuitive visualizations that highlighted critical metrics and performance indicators, facilitating a clear understanding of data-driven narratives.
- Led a team of 2 Research Assistants, providing training and overseeing the recruitment of 67 children for in-person and online testing.
- Designed and implemented multivariate experiments combining eye-tracking, survey, and user interview techniques, providing a holistic understanding of user responses.
- Developed robust R scripts for preprocessing, analyzing, and visualizing eye movement data and survey responses. Techniques included statistical testing, clustering, and regression analysis to identify significant trends and correlations.
- Leveraged analytical skills to identify patterns and trends in complex datasets, enabling the development of effective solutions to key business challenges.
- Delivered actionable insights leading to a 60% reduction in project costs and timelines through targeted design improvements and strategic recommendations.
- Recognized through a feature in a Brighter World article, presentation at the Quant UX conference, and upcoming publication in a peer-reviewed journal.
- Significantly improved stakeholder comprehension of key performance metrics, leading to more informed decision-making and strategic initiatives.
- Prepared detailed technical documentation and reports for stakeholders, ensuring clarity and precision in the presentation of statistical methodologies and data modeling processes.

Tools & Technologies: EyeLink 1000 Plus, R, Tableau, R Shiny, Qualtrics, Mixed Models

Psycholinguistics Graduate Researcher (selected projects)
Reading Lab| McMaster University, Canada | Sep 2017 – June 2022

- Successfully analyzed large-scale language data from Twitter to identify and visualize trending words and their geographical distribution, utilizing R libraries to create interactive maps. This work was recognized with two funding awards.
- Utilized R, Python, and data modeling to process and analyze substantial volumes of data, employing text mining and data mining techniques to extract meaningful insights.
- Integrated multimodal data, including time-series and language data, to investigate neural mechanisms in language processing, contributing to a comprehensive exam paper that received excellent academic feedback.
- Developed a sentiment analysis model using NLP techniques to classify and predict sentiments in textual data, enhancing the understanding of factors affecting adult word learning. Published findings in The Mental Lexicon.
- Conducted eye-tracking studies to analyze reading patterns, focusing on gaze and fixation durations. Published research in the Journal of Cognitive Psychology.
- Demonstrated dedication by consistently meeting tight deadlines on high-impact projects, resulting in 10+ publications and conference presentations.

Tools & Technologies: R, Python, Machine Learning Models, Text Mining Techniques, Data Mining Tools, EEG Analysis Software, ANOVA, EyeLink Plus, Mixed Models

Graduate Teaching Assistant in Cognitive Science of Language

McMaster University, Canada | Sep 2017 – June 2022

- Assisted in teaching eight undergraduate courses, conducted evaluations, and graded exams and assignments.
- Provided mentorship to students through office hours and individual interactions.

Graduate Researcher in Cognitive Science

Middle East Technical University (METU), Turkey | Jul 2015 – Feb 2017

- Aggregated and analyzed data from a crowdsourced dictionary platform, utilizing Python for topic modeling to accurately identify and categorize word senses in short texts, enhancing linguistic analysis capabilities. Successfully developed a comprehensive categorization system for word senses.
- Conducted a study using eye-tracking techniques to analyze where users focus on images displayed on a computer screen, emphasizing gaze patterns and fixation durations.
- Identified key visual elements that attract user attention, leading to recommendations for optimizing image layout and design, ultimately enhancing user engagement and experience.

Tools & Technologies: Python, Tobii, R, topic modeling, SPSS

Multimedia Application Developer

Sebit Information & Education Technologies Inc, Turkey | Jul 2009 – Jan 2015

- Developed over 100 interactive e-learning objects using JavaScript, HTML, and CSS, significantly enhancing the interactivity and engagement of educational content.
- Excelled in a cross-functional team environment, utilizing Agile methodologies to ensure projects were completed on time and met quality standards.
- Led the analysis of user behavior on Sebit's e-learning platform through Google Analytics, focusing on understanding user engagement, content effectiveness, and identifying opportunities for improvement, that resulted in a 25% increase in course completion rates and a 15% reduction in bounce rates, leading to a more personalized and effective learning experience for users.
- Leveraged problem-solving abilities to facilitate collaboration between developer and engineering teams, leading to the successful integration of a new API that improved system scalability.

Tools & Technologies: Google Analytics, Excel, SQL