# MELDA COSKUN, PhD

Data Scientist, Quantitative UX Researcher

Toronto, ON
+1 (905) 818 9199
meldacoskun@gmail.com
www.linkedin.com/in/meldacoskunphd

## Professional Summary

- Over 8 years of combined experience in industry and academia, with extensive experience analyzing complex datasets, including natural language data, neuro-signals, eye movement, and other human behavior data, to derive actionable insights and translate raw data into impactful recommendations.
- Excellent proficiency in R and working knowledge in Python for data analysis and visualization.
- Known for developing innovative methodologies to enhance data-driven decision-making processes and collaborating with diverse stakeholders to drive impactful outcomes

## Relevant Skills

- Statistics, Machine Learning and Data Mining:
  - Regression, Classification, Clustering, PCA, Random Forest, Neural Network, Bayesian statistics, Generalized Linear Models, A/B testing, Big datasets, Hypothesis Testing
- Programing languages and Data Visualization:
  - R (e.g., ggplot2), SQL, Tableau.

## Education

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

## Work Experience

**Quantitate UX Researcher**                                                                                       Apr 2023 –

**CBC/Radio-Canada & McMaster University, Canada**

- Led a cross-disciplinary team in a high-profile project with CBC/Radio-Canada, resulting in a significant improvement in closed caption presentations, as featured in a Brighter World article with over 500+ viewers on LinkedIn.

  Link to the article: https://brighterworld.mcmaster.ca/articles/researchers-team-up-with-cbc-kids-to-make-closed-captions-better/
- Developed and implemented efficient ETL processes using Python (Pandas) and R to aggregate and clean eye movement data, survey responses, and linguistic data, ensuring data accuracy and completeness for analysis.
- Developed efficient and eloquent code in R to analyze survey responses, eye movement data, and comprehension questions to derive actionable insights.
- Conducted thorough assessments of industry trends, analyzed competitors' current practices, reviewed scientific literature, to identify ideal key metrics, proposed strategic ideas, and developed measurement techniques to enhance closed caption presentations.
- Transformed raw data from eye-tracking tests and online user surveys into insightful visual representations, using ggplot2 and Tableau, enabling easy identification of hidden patterns and insights.
- Provided descriptive and statistical analyses to stakeholders, facilitating informed decision-making.

- Collaborated closely with diverse stakeholders, including producers, content creators, and experts in fields such as pediatrics and psycholinguistics, to ensure alignment with specific requirements and perspectives in closed caption presentation strategies.

**Psycholinguistics Graduate Researcher**                                     Sep 2017 – June 2022

**Reading Lab| McMaster University, Canada**

- Led and executed 7+ experimental and computational research projects, applying advanced data science methodologies to gain profound insights into language representation in the human mind.
- Analyzed diverse datasets, including linguistic data, eye-tracking data, EEG time series signals, geo-tagged Twitter data, and survey findings, employing sophisticated data science techniques to extract meaningful patterns and trends.
- Proficiently utilized R for complex statistical analysis, machine learning methods, and data visualization, enabling data-driven decision-making and effective communication of research findings.
- Applied state-of-the-art machine learning models, text mining techniques, and data mining tools to analyze a substantial volume of Twitter data, conducting an in-depth study on the emergence and spread of novel words in the United States and Canada, awarded funding from two sources.
- Demonstrated expertise in creating interactive geographical maps using R libraries to visualize and illustrate the geographic distribution of geo-tagged tweets.
- Successfully supervised and trained 7 undergraduate and graduate students on eye-tracking, lab use, and maintenance procedures, contributing to their skill development and research proficiency.
- Implemented robust methods to assess the statistical model's power when determining the significance of main factors, ensuring the reliability and validity of research findings.

**Graduate Teaching Assistant in Cognitive Science of Language**          Sep 2017 – June 2022

**McMaster University, Canada**

- Assisted in teaching eight undergraduate courses with a total of 1200 students, conducted thorough evaluations, and graded exams, assignments, and papers.
- Aided students in grasping complex concepts and understanding instructional materials effectively.
- Served as a mentor to students through office hours and individual interactions, providing guidance and support.

**Graduate Researcher  in Cognitive Science**                               Jul 2015 – Feb 2017

**Middle East Technical University (METU), Turkey**

- Proficiently programmed eye-tracking experiments and surveys using Python's PyGaze library, HTML, and JavaScript.
- Expertly aggregated data from a crowdsourced dictionary platform and employed Python for topic modeling to discern senses of words in short texts.
- Applied various machine learning algorithms, including supervised and unsupervised techniques, to address research questions effectively.
- Conducted data extraction, data cleaning, model training, and model selection, ensuring the quality and accuracy of analyses.

**Multimedia Application Developer**                                         Jul 2009 – Jan 2015

**Sebit Information & Education Technologies Inc, Turkey**

- Developed 50+ interactive e-learning products meticulously incorporating SEO strategies and usability metrics for mobile, tablet, and responsive web platforms using HTML, JavaScript, and

CSS. Ensured these products placed learners at the center of design, optimizing engagement and learning outcomes.

- Effectively got to collaborate in a cross-functional team, participated at all stages of the product development process, and developed strong knowledge of Design Thinking methodologies.

- Navigated dynamic and fast-paced environments with agility, consistently delivering high-quality products that aligned with SEO best practices and industry standards.

## Publications and Presentations:

- Coskun, M., Kuperman, V., & Rueckl, J. (2023). Long-lag repetition priming in natural text reading: No evidence for morphological effects. *The Mental Lexicon*.

- Acarturk, C., Coskun, M., & Emil, S. (2022). Multimodal communication in instructional settings: An investigation of the functional roles of gestures and arrows. *Revista Signos. Estudios de Lingüística*, 54(107).

- Coskun, M., & Kuperman, V. (Under review). The Role of Morphological Priming in Orthographic and Semantic Word Learning. *Language Learning and Development*.

- Coskun, M., Lana, N., & Kuperman, V. (Under review). Exposure and Attention in Novel Word Learning in the First and Second Language. *Journal of Cognitive Psychology*.

- Coskun, M., & Kuperman, V. (2021, November 4). The role of morphological priming in orthographic and semantic word learning. Paper presented at the Psychonomic Society Annual Meeting, Virtual.

- Coskun, M., & Kuperman, V. (2021, July 16). No morphological priming during natural reading of long texts. Paper presented at the Society for the Scientific Study of Reading (SSSR) Annual Meeting, Virtual.

- Coskun, M., & Kuperman, V. (2020, October 16). Morphological priming during natural reading of long texts. Paper presented at the Words in the World International Conference, Virtual.

- Coskun, M., Lana, N., & Kuperman, V. (2019, November 8). Boosting Novel Word Learning in L1 and L2 Readers of English. Paper presented at the 60th Annual Meeting of the Psychonomic Society, Montréal, Canada.

- Coskun, M., Lana, N., & Kuperman, V. (2019, July 17). Effects of selective attention on novel word learning in L1 and L2 readers: An eye-tracking study. Paper presented at the SSSR Annual Meeting, Toronto, Canada.

- Coskun, M. (2019, April 17). A Closer Look at New English Words. Paper presented at the Graduate Colloquium, Sherman Centre, McMaster University, Canada.

- Coskun, M. (2018, April 10). A closer look at new English words. Paper presented at the Student Research Day, McMaster University, Canada.

## Passion

- Flamenco, Yoga