

William S. de Melo

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Emerging Data Scientist and Machine Learning Engineer

Research | Statistics | AI

Emerging Data Scientist/ML Engineer with a strong foundation in quantitative/qualitative research, applied statistics, and machine learning. Experienced in building and evaluating AI models, uncovering trends in data and explaining why they occur, and finding the optimal solution to computational problems. Adept in working in collaborative environments and converting complex topics into understandable insights. Passionate about problem solving and realizing novel applications for deep learning.

Education

University of California San Diego (UCSD)

La Jolla, CA, 07/2024 – 06/2025

M.S., Computational Social Science

- **GPA:** 3.96
- Relevant Coursework
 - Causal Inference
 - Bayesian Methods
 - Advanced Statistical Applications
 - Machine Learning for Social Scientists
 - Computational Social Sciences Technical Bootcamp

Soka University of America (SUA)

Aliso Viejo, CA, 08/2019 – 05/2023

B.A., Liberal Arts, Social and Behavioral Sciences Concentration

- **GPA:** 3.92
- Relevant Coursework
 - Regression Analysis
 - Experimental Research Methods
 - Social and Behavioral Sciences Research Methods
 - Art of the Essay
 - Advanced Communication Skills
- Honors and Awards
 - Pi Gamma Mu Certification and Membership 05/2023
 - Excellence in Academics Award 10/2022
 - Merit Scholarship 08/2019 – 05/2023
 - Dean's List 08/2019 – 05/2023

Experience

Research Assistant, Palm Beach Atlantic University (PBA) Decision-Making Lab 06/2023 – 04/2024
West Palm Beach, FL

- Collected, cleaned, and validated psychological research data using Google Forms, SPSS
- Prepared confidential datasets and performed statistical analyses to derive insights
- Worked in-person with participants to test validity of measures

Research Assistant, Soka University of America (SUA) Life Goals of Youth Lab 09/2022 – 05/2023
Aliso Viejo, CA

- Cleaned, formatted, and translated experimental panel data using Excel, SPSS, and Stata
- Organized spreadsheets from different periods of data collection for statistical analyses
- Co-authored and presented research poster for the 2023 Western Psychological Association conference

Research Fellow/Executive Assistant, Quality of Life eXperiments 06/2022 – 09/2022

Remote

Supervisors: Philip Zimbardo, Ph.D. and Mel Ganus, Ph.D.

- Wrote, researched for, and published [articles](#) for Dr. Zimbardo's Psychology Today blog
- Assisted Dr. Zimbardo and Dr. Ganus in editing and publishing their book, How to SQUID

Crisis Counselor, Crisis Text Line

06/2021 – 06/2024

Remote

- Supported over 500 texters in emotional crises over 200+ hours through biweekly night shifts
- Consoled people undergoing life-threatening stress, heard their struggles to develop specific next steps
- Provided emotional and practical support to new and returning texters to help them move forward

Skills

Languages:	Python, R, Julia, SQL, Jupyter, HTML, Bash, Stata
Python Packages:	Pandas, NumPy, Tensorflow/Keras, Plotly, StatsModels, Sci-Kit Learn, PyTorch
R packages:	Tidyverse, caret, class, MASS
MLOps & Distributed Tools:	Docker, Git, Jupyter, AWS
Visualization & Spreadsheets:	Tableau, GIS, SPSS, Excel, Google Sheets, Procreate
Survey & Crowdsourcing:	Qualtrics, Google Forms, Prolific, js-psych

Capstone Project

DeepVerse (Python)

09/2024 – 06/2025

Supervisor: Umberto Mignozetti, Ph.D.

- Developing modular, reusable Python packages to simplify deep learning for use by all skill levels
- Designing adversarial autoencoder software for imputing missing data using TensorFlow and PyTorch
- Comparing model accuracy with alternative imputation tools (MIDAS, MICE, Amelia, etc.)

Notable Projects

Fraudulent Job Posting Detector (Python)

- Trained SVC models to analyze text data to separate fraudulent and legitimate job postings
- Evaluated, compared differences between separate approaches to text vectorization
- Obtained a maximum F1-Score of 94% through hyperparameter tuning and cross-validation

Mental Health After COVID-19 (R)

- Conducted a big data quantitative study analyzing national mental health trends as lead author
- Utilized ZINB models with feature engineering, stepwise dimensionality reduction, and cross-validation
- Identified key changes in risk factors post-pandemic, with implications for public health interventions

[Drug War Casualty Prediction Reproduction Study](#) (R)

- Developed alternatives to the authors' original negative binomial model, increasing fit and generalizability
- Used scenario testing with updated models to re-evaluate the authors' original claim
- Rendered, formatted report with visualizations and tables stylized for professional, publishable quality

[Choice Architecture of Donation Replication Study](#) (R)

- Programmed website in HTML to collect survey data using crowdsourcing, automated data sync to OSF
- Cleaned raw data from pipeline to useable tabular format, curated to ensure data confidentiality
- Created professionally rendered online report from R with insights taken from statistical tests

[Machine Learning for Emotional Intelligence](#) (Python)

- Built multimodal ML system combining image and text classifiers using TensorFlow and Keras
- Used pairs of facial expression and sentiment-labeled text data to infer one of seven emotional states
- Combined models with soft voting ensemble, achieving 52% emotion classification accuracy

[Predicting Depression in Florida](#) (Python)

- Acquired and processed behavioral and geographic data from SimplyAnalytics for ML prediction
- Trained six classifiers using scikit-learn to classify missing county-level depression rates in Florida
- Tuned model hyperparameters to achieve over 70% in-sample classification accuracy

Presentations

DeepComplete: Generative Adversarial Autoencoders for Multiple Imputation	04/2025
<ul style="list-style-type: none"> ● Employed an adversarial autoencoder to condense input from tabular and/or image data into a two-dimensional latent space, the convex hull of which is sampled to replace missing data ● Improved imputed accuracy over nonparametric, linear, and other deep learning methods; able to generate predictions for corrupted American National Election Studies (ANES) data in under five minutes ● Delivered at the annual meetings of the Midwestern Political Science Association, Chicago, Illinois, 2025. 	
Investigating Gender Differences in Life Goals Before and During COVID-19	04/2023
<ul style="list-style-type: none"> ● Examined differences in undergraduate life goals before and during the COVID-19 pandemic; found that female participants significantly re-evaluated priorities in maintaining health and family ties. ● Formatted data, performed statistical tests, constructed and presented poster ● Delivered at the annual meetings of the Western Psychological Association, Riverside, California, 2023. 	
Potential Effect of Mother's Occupational Shared Agency on Occupational Goal Stress	05/2022
<ul style="list-style-type: none"> ● Determined relationships between parental involvement and college students' work-related motivational thinking and stress, proposed ways for parents to play an active role in their childrens' mental health ● Assisted with construction, presented poster ● Delivered at the annual meetings of the Western Psychological Association, Portland, Oregon, 2022. 	

Professional Certificates

Google Data Analytics professional certificate	12/2023
CITI Social & Behavioral Research certification	09/2022

Volunteer Experience

<i>Student Board Member</i> , Palm Beach Atlantic University Institutional Review Board	06/2023 – 04/2024
<ul style="list-style-type: none"> ● Proofread, edited, and screened student/faculty-submitted research proposals for ethical concerns 	
<i>Founder and President</i> , SUA Psychology Club	09/2022 – 05/2023
<ul style="list-style-type: none"> ● Organized on-campus events to facilitate growth of SUA psychology students' careers 	
<i>Editor</i> , WikiBlind User Group	06/2022 – 09/2022
<ul style="list-style-type: none"> ● Wrote a successful travel grant for \$2,000 through the Wikimedia Rapid Fund program 	

References

Name **Dr. Umberto Mignozzetti**
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Name **Dr. Chandrima Powers**
Title Associate Professor of Psychology
Institution Palm Beach Atlantic University
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Name **Dr. Seiji Takaku**
Title Professor of Psychology/Institutional Research and Assessment Coordinator
Institution Soka University of America
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Name **Dr. Esther Chang**
Title Professor of Psychology, Director of Social and Behavioral Sciences Concentration
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Name **Dr. Robert Moyzis**
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