Orianna DeMasi

Emeryville, CA 94608
✉ oriannaamy@gmail.com
odemasi.github.io
linkedin.com/in/orianna-demasi

Overview

My current research focuses on dialogue systems and my graduate research applied machine learning methods to develop and evaluate tools specifically for mental health. I enjoy working on multi-disciplinary teams with complex datasets and am especially concerned with whether computational methods are reliable and effective in important real-world applications.

Education

2019 **Ph.D. Computer Science**, *University of California, Berkeley*.
Evaluation of Methods for Data-Driven Tools that Empower Mental Health Professionals

2009 **B.Sc. Mathematics**, *McGill University*.

Experience

2019-2021 **University of California, Davis**, *Postdoctoral Researcher*, Computer Science.

- Led, contributed to NLP research projects focused on conversational agents.
- Developed, trained, evaluated neural net generation + retrieval framework with GPT-2 to improve persona-consistency and text diversity to simulate users and train hotline counselors (EMNLP Findings 2020).
- Used linear models to assess consequences of errors in chatbot counseling contexts.
- Helped design dataset and model evaluation for peer-support chat agent (ACL 2021).
- Developed undergraduate course module for exploring ethical implications of computer systems via open-domain chatbots.
- Built, deployed chatbots + websites for 3 interactive user studies and dataset collection.
- Collaborated on multi-disciplinary teams with various stakeholders.
- Led 3 approved IRB applications, wrote 2 grants.

2012-2019 **University of California, Berkeley**, *Graduate Student Researcher*, Electrical Engineering and Computer Sciences.

- Thesis focused on using computational methods to build tools for mental health professionals.
- Engineered features and developed machine learning models with time series of mobile phone sensors to predict user wellbeing, e.g., mood.
- Developed framework to rigorously evaluate machine learning model predictions on longitudinal patient data with statistical permutation tests.
- Collaborated with researchers in UCSF Psychiatry to evaluate an SMS texting program to improve outcomes for CBT therapy to treat clinical depression. Used Mann–Whitney U tests, mixed-effects linear models to analyze patient responses in an RCT.
- Designed, collected, cleaned, and curated complex, messy datasets of various data types.

.

- Led, collaborated on, and communicated with multi-disciplinary teams, including crisis counselors and clinicians, to run 2 user studies, 1 RCT, and 1 survey.

2016-2018 **Berkeley Institute for Data Science**, *Data Science Fellow*.

- Led research project to evaluate "ad hoc" data science education programs and develop suggestions for future efforts.

- Led Diversity and Inclusion working group through development and implementation of a workshop series to build community and support undergraduate students in data science.

2015-2016 **Twitter Inc**, *Data Science Intern*, Business Insights Team.

- Developed clustering framework for hashtag communities.

- Identified hashtag communities with increased engagement.

- Wrote paper nominated for Best Paper at ICWSM '16.

2010-2012 **Lawrence Berkeley National Laboratory**, *Computer Systems Engineer*, Complex Systems Group.

Mathematical cyber-security project. Worked on using machine learning to identify what code was being run on supercomputers as a potential way to monitor allocation usage.

2009 **McGill University**, *Research Assistant*.

Worked with Professor Tony Humphries to study a delay differential equation with two state dependent delays (SDDE).

2008 **Texas A&M University**, *Research Experience for Undergraduates*.

Worked with John Walton and Yuliya Gorb to model the migration of coyotes in the US.

2007 **Woods Hole Oceanographic Institute**, *Summer Student Fellowship*.

Worked with Steve Lentz to model tidal dynamics near Cape Cod.

Selected Publications

S. Liu, C. Zheng, O. DeMasi, et al. *Towards Emotional Support Dialog Systems.* ACL (2021)

O. DeMasi, Y. Li, Z. Yu *A Multi-Persona Chatbot for Hotline Counselor Training.* EMNLP Findings (2020)

CA. Figueroa, O. DeMasi, R. Hernandez-Ramos, and A. Aguilera *Who benefits most from adding technology to depression treatment and how? An analysis of engagement with a texting adjunct for psychotherapy.* Journal of Telemedicine and e-Health. (2020)

O. DeMasi, A. Paxton, and K. Koy *Ad Hoc Efforts for Advancing Data Science Education* PLOS Computational Biology. (2020)

O. DeMasi, M. Hearst, and B. Recht *Towards Augmenting Crisis Counselor Training by Improving Message Retrieval* NAACL workshop on Computational Linguistics and Clinical Psychology. (2019)

O. DeMasi, K. Kording, and B. Recht *Meaningless comparisons lead to false optimism in medical machine learning.* PLOS One. (2017) `http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0184604`

O. DeMasi, S. Feygin, A. Dembo, A. Aguilera, and B. Recht *Wellbeing Tracking via Smartphone Measured Activity and Sleep: Cohort Study.* JMIR Mhealth Uhealth. (2017) `http://dx.doi.org/10.2196/mhealth.7820`

O. DeMasi and B. Recht *An example of how false conclusions could be made with personalized health tracking and suggestions for avoiding similar situations.* Data for Good Exchange. (2017)

O. DeMasi and B. Recht *A Step Towards Quantifying When an Algorithm Can and Cannot Predict an Individual's Wellbeing.* Ubicomp Workshop on Mental Health: Sensing and Intervention. (2017)

A. Aguilera, E. Bruehlman-Senecal, O. DeMasi, P. Avila *Automated text messaging adjunct to CBT treatment increases attendance and reduces attrition.* JMIR. (2017)
http://www.jmir.org/2017/5/e148

O. DeMasi, A. Aguilera, B. Recht *Detecting Change in Depressive Symptoms from Daily Wellbeing Questions, Personality, and Activity.* Wireless Health. (2016)

O. DeMasi, D. Mason, J. Ma *Understanding Communities via Hashtag Engagement: A Clustering Based Approach.* International Conference on Web and Social Media. (2016) [**Best paper nominee, 17% acceptance rate**]

O. DeMasi, J. Gonzalez, B. Recht, J. Demmel, *Using Bayesian Optimization for Hardware Design.* Workshop on Bayesian Optimization, NIPS. (2014)
http://bayesopt.github.io/papers/paper3.pdf

A.R. Humphries, O. DeMasi, et al. *Dynamics of a Delay Differential Equation With Multiple State Dependent Delays.* DCDS-A. (2012)
http://www.math.mcgill.ca/humphries/research/papers/DCDS-A7.pdf

Awards

2018	**EECS Rising Stars invited participant**, *Massachusetts Institute of Technology*. Selective workshop for women considering academic careers in EECS.
2016-2018	**Data Science Fellowship**, *Berkeley Institute for Data Science*. Fellowship for two years of graduate research.
2018	**First place award**, *Big Ideas innovation competition, UC Berkeley*. Connected Communities category.
2017	**Tech for Social Good Fellowship**, *The Center for Information Technology Research in the Interest of Society (CITRIS), UC Berkeley*. Research project funding.
2014	**Mobile App Challenge**, *Center for Information Technology Research in the Interest of Society (CITRIS), UC Berkeley*. Award for developing the MoodStreamer smartphone application.
2012-2016	**ARCS Graduate Fellowship**, *ARCS Foundation, Northern California chapter*. Full support for four years of graduate research.
2012	**Excellence Award**, *Department of Electrical Engineering and Computer Sciences, UC Berkeley*.
2009	**Summer Undergraduate Research Award**, *McGill University*.
2006-2007	**Fellowship for Outstanding Scholarship**, *Western Connecticut State University*.

Teaching

| 2017-2018 | **Fung Fellowship for Wellness and Technology Innovations**, *School of Public Health, UC Berkeley*. |

Teaching assistant to Jaspal Sandhu. Course focused on developing health and technology solutions with human-centered design.

2016 **Applications of Parallel Computing (graduate course)**, *Department of EECS, UC Berkeley*.

Teaching assistant to James Demmel.

2014 **Statistical Learning Theory (graduate course)**, *Departments of EECS and Statistics, UC Berkeley*.

Teaching assistant to Benjamin Recht.

2006-2009 **Grader and Tutor for various math courses**, *McGill University and Western Connecticut State University*.

Graded: Advanced Calculus (fall 2008), Numerical Analysis (fall 2009), Real Analysis (fall 2009). Tutored: McGill Help Desk, WCSU Tutoring Resource Center, WCSU Math Clinic.

Academic Service

2021 **Workshop organization**, ICLR workshop on neural conversational agents (NeuCAIR 2021).

2016-2020 **Reviewer**, EMNLP, JMIR, GigaScience, Ubicomp workshop mental health.

2010-2021 **Research Mentor**, I have mentored 18 students through independent research.

2018-2019 **Working group lead**, Berkeley Institute for Data Science Diversity and Inclusion Working Group.

We sought to increase diversity and promote inclusion within data science at UC Berkeley and the Open Source Software community.

2018 **Working group member**, Education and Training Working Group.

Group at the Berkeley Institute for Data Science focused on expanding data science education.

2016-2017 **Co-president**, Women in Computer Science and Electrical Engineering (WICSE).

Co-president leading networking, promotion, and outreach for graduate women in EE and CS.

2012-2016 **Outreach Mentor**, Graduate Pathways Symposium, Black Girls Code, Technovation.

2015-2016 **Industrial Liaison**, Women in Computer Science and Electrical Engineering.

2014-2015 **Treasurer**, Women in Computer Science and Electrical Engineering (WICSE).

Skills

Pytion (pandas, matplotlib, numpy, statsmodels, scikit-learn, flask, jupyter, pytorch, seaborn, parlai, transformers, rpy2), SQL, Bash, Git & GitHub, MTurk, HTML