Davina Zamanzadeh

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Education

University of California, Los Angeles

PhD - Computer Science   Gpa: **4.0/4.0**   Sept '18 - Aug '23

- Research in **eHealth and Machine Learning** with Drs. M. Sarrafzadeh & A. Bui.
- **Dissertation** (code available on Github): *Imputation is a Hyperparameter: Imputation Deep Learning Model Selection and Evaluation on Large Clinical Datasets.*

University of California, Santa Barbara

BSc - Computer Science   Gpa: **3.93/4.0**   Sept '14 - June '18

- **Ranked #1** in graduating class with Distinction in Major.

Research

eHealth Research & MII Lab, UCLA   Sept '18 - Aug '23

- CRRT: Developing a system to predict if a patient with late-stage kidney disease will benefit from a gentler form of dialysis; collaboration with UCLA Health and Cedars Sinai.
- CURE-CKD: Developing novel imputation techniques to assist with prediction tasks regarding patients with Chronic Kidney Disease (CKD) (e.g.,predicting rapid kidney function decline); collaboration with UCLA Health CURE-CKD Team.
- Project REFOCUS: Constructing a racism-aware COVID-19 surveillance system to address health inequities; collaboration with UCLA School of Public Health and the CDC.
- Established a collaboration with Translational Genomics Group at Cedars Sinai to build a model to predict whether a Crohn's Disease patient will experience post-operative recurrence.

Work Experience

Data Science Intern at **Microsoft**, *Remote*   June '21 - Sept '21

Best In-House Image DNN: Developed a semi-novel knowledge distillation technique for deep neural networks (DNN) in a multi-teacher setting to produce universal image embeddings that will generalize well across tasks and boost performance beyond the teachers.

- Researched and implemented methods to save memory and speed up training, allowing us to increase the batch-size from 2 to 64 for 2 teachers resulting in roughly a 3x speedup.
- Wrote end-to-end executable code that unifies the data preprocessing and model loading pipeline across various tasks such that it can be easily extended to different datasets/teachers.

Technologies: python, tensorflow, keras

Machine Learning Intern at **Pinterest Labs**, *Remote*   June '20 - Sept '20

Query Recommendations: Built a gradient boosted decision tree to improve query recommendations to improve user engagement and experience.

- 156k increase in daily searches (3.09%), and sustained lift in product usage past week 1 of the experiment. Ran A/B testing experiments to measure product impact.
- Worked on the end-to-end machine learning pipeline (collect training data, assign labels, create features, train, evaluate, and deploy), and built workflow for hyperparameter tuning.

Technologies: python, java, scala, hadoop, SQL

Recent Publications

1. **D. Zamanzadeh**, J. Feng, P. Petousis, A. Vepa, A. Bui, I. Kurtz. *Improving continuous renal replacement therapy outcome predictions with machine learning*, Manuscript in submission for Nature Communications (pending review), 2023.

2. R. Schouten, **D. Zamanzadeh**, P. Singh, *pyampute: a Python library for data amputation*, 21st Python in Science Conference, 2022

3. M. Wong, M. Wells, **D. Zamanzadeh**, S. Akre, J. Pevnick, A. Bui, K. Gregory, *Applying automated machine learning to predict mode of delivery using ongoing intrapartum data in laboring patients*, American Journal of Perinatology, 2022

4. **D. Zamanzadeh**, P. Petousis, T. Davis, S. Nicholas, K. Norris, K. Tuttle on behalf of the CURE-CKD Study team, A. Bui, M. Sarrafzadeh. *Autopopulus: A Novel Framework for Autoencoder Imputation on Large Clinical Datasets.* IEEE Engineering in Medicine and Biology Conference (EMBC) 2021.

5. S. Fazeli, **D. Zamanzadeh**, A. Ovalle, T. Nguyen, G. Gee, M. Sarrafzadeh. *COVID-19 and Big Data: Multi-faceted Analysis for Spatio-temporal Understanding of the Pandemic with Social Media Conversations.* arXiv preprint arXiv:2104.10807 2021.

Activities and Awards

March '23	**Featured Guest on Health and Explainable AI Podcast**: Discussed my experience working on intersectional projects in the clinical domain, and my ideas on the future of responsible AI in health.
July '22 - Present	**Scientific Python Community Manager**: Help moderate the Discord and the Discuss forum of the Scientific Python open-source community.
Fall '21 - Aug '23	**NIH KUH-ART TL1 Training Grant**: Awarded fellowship to conduct research in the areas relevant to benign nephrology, urology and hematology
'20 - Present	**Podcast Treasurer and Content Advisor**: Managing funds and helping create content (e.g., social media, writing and narrating episodes) for For Your Informatics, a podcast exploring medical informatics led by Women in AMIA (American Medical Informatics Association).
Fall '18 - Spring '20	**NIH T32 Training Grant**: Awarded fellowship to pursue informatics towards improving health outcomes on clinical data.
Summer '17	**KPCB Fellow and Decision Committee:** Selected to participate in networking events with technical leaders in Silicon Valley. Served on the Decision Committee for potential 2018 Fellows.
Spring '16 - Spring '18	**Phi Sigma Rho Chapter Founder/Director of Design:** Established the UCSB chapter of Phi Sigma Rho, a national sorority for women in STEM, as part of the founding class. In charge of designs, and involved in planning events, writing bylaws, recruiting, and mentorship.