Maxwell Reynolds

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EDUCATION

University of Pittsburgh *Aug 2020-June 2024 (Expected)*
PhD Student in Biomedical Informatics Pittsburgh, PA
GPA: 4.0, advisor Kayhan Batmanghelich

University of Colorado *Aug 2018-May 2020*
B.S. Applied Computer Science Boulder, CO
GPA: 3.9

University of California, Los Angeles *Sep 2014-June 2018*
B.S. Biology Los Angeles, CA
GPA: 3.8

RESEARCH EXPERIENCE

PhD Student Researcher *Jan 2021-Present*
Batman Lab – University of Pittsburgh Pittsburgh, PA
I research methods to analyze structural brain images using deep learning and Bayesian inference. My first project involved developing a hierarchical model for harmonization of neuroimaging data from multiple different scanners. I am currently working on developing longitudinal self-supervised learning approaches to improve disease classification and prediction from brain images.

Undergraduate Researcher *Sep 2016-Aug 2018*
Nguyen Lab- VA Greater Los Angeles Los Angeles, CA
I performed strain tracings using heart ultrasound (echocardiography), collected data for examination of strain and strain rate in HIV patients, and wrote a manuscript on the reliability of cardiac strain measurements.

PROFESSIONAL EXPERIENCE

Machine Learning Summer Associate *June 2023-Aug 2023*
Morgan Stanley New York, NY
- Developed new recommender system algorithms for matching brokerage clients with financial advisors
- Proposed, implemented, and evaluated deep learning-based models
- Presented results and proposed next steps to management

Software Engineer *Jan 2020-Aug 2020*
Palo Alto Health Sciences (now Freespira) Seattle, WA
- Led Salesforce Health Cloud integration for the company. This included designing the data architecture, writing backend code, and building Lightning Web Components and Visualforce pages
- Full-stack development projects for clinical data website
- Built an internal payment app to facilitate patient billing using REST and SOAP APIs

Software Engineer Intern *May 2019-Dec 2019*
Palo Alto Health Sciences (now Freespira) Seattle, WA
- Worked on full-stack development and SQL database changes for internal clinical data analysis website using PHP, SQL, HTML, and other tools
- Created test automation scripts to accelerate manufacturing process for medical devices used to treat panic disorder and PTSD
- Assisted in device R&D with mechanical, electrical, and manufacturing engineering teams

Emergency Medical Technician/Field Training Officer *June 2015-Sep 2018*
UCLA Emergency Medical Services Los Angeles, CA
- Responded in ambulance to 911 calls in West Los Angeles area
- Assessed, treated, and transported patients to emergency room
- Administered simulations and worked with trainee EMT's, evaluated their progress, and helped them improve EMT skills and knowledge
- Served on the Hiring Board

Youth Movement Against Alzheimer's *Aug 2015-Dec 2017*
Volunteer Program Director Los Angeles, CA
- Started the YMAA TimeOut@UCLA Intergenerational Volunteer Program which pairs Alzheimer's patients with UCLA students for 3-hour sessions every week
- Created activity agendas and led activities in first quarter of program
- Led student volunteer recruitment efforts, coordinator recruitment, and worked with advisors from UCLA Alzheimer's and Dementia Care Program to pair students with Alzheimer's patients

PUBLICATIONS

Reynolds, M., Chaudhary, T., Torbati, M.E., Tudorascu, D.L., Batmanghelich, K., 2023. ComBat Harmonization: Empirical Bayes versus Fully Bayes Approaches. *NeuroImage Clin*. 39. https://doi.org/10.1016/j.nicl.2023.103472

Yu, K., Sun, L., Chen, J., **Reynolds, M.**, Chaudhary, T., Batmanghelich, K., 2023. DrasCLR: A Self-Supervised Framework of Learning Disease-Related and Anatomy-Specific Representation for 3D Medical Images. arXiv 1–20. https://doi.org/10.48550/arXiv.2302.10390

Xu, Y., Xie, S., **Reynolds, M**., Ragoza, M., Gong, M., Batmanghelich, K., 2022. Adversarial Consistency for Single Domain Generalization in Medical Image Segmentation. *MICCAI*. https://doi.org/10.48550/arXiv.2206.13737

Berg, C.J., Patel, B., **Reynolds, M.**, Tuzovic, M., Chew, K.W., Sico, J.J., Bhattacharya, D., Gottdiener, J.S., Warner, A.L., Freiberg, M.S., 2022. Left Atrial Mechanics and Diastolic Function Among People Living With Human Immunodeficiency Virus (from the Veterans Aging Cohort Study). *Am. J. Cardiol.* 186, 50–57.

CONFERENCE PRESENTATIONS

Organization for Human Brain Mapping (OHBM) *2022*
Statistical Methods in Imaging (SMI) *2022*

TECHNICAL SKILLS

Languages: Python, R, SQL, PHP, Apex, Visualforce, HTML
Softwares: Pytorch, Pyro, MONAI, Freesurfer, ANTS

PROGRAMMING SIDE PROJECTS

SongSorter
- Web app to sort a user's library into playlists based on song genres
- Built with Python/Flask, hosted on Linux server, available here

MazeSolver
- Program that solves user-uploaded mazes using Dijkstra's algorithm
- Built with OpenCV and Streamlit, available here