Adesh Kadambi

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Education –

Ph.D. in Biomedical Engineering @ University of Toronto, Toronto, ON Sept 2020-Aug 2025
Advisor: José Zariffa
Thesis Title: Implementing clinical decision support in outpatient rehabilitation using wearable cameras
Thesis Committee: Rosalie Wang, Shehroz Khan, Elaine Biddiss

B.Eng in Biomedical Engineering (Co-Op) @ University of Guelph, Guelph, ON Sept 2015-Jun 2020
Advisor: Medhat Moussa
Thesis Title: Intelligent robotic grasping using multimodal sensory input

Research Interests & Relevant Skills –

Interests: Computer Vision, Generative Models and LLMs, Applied Machine Learning, Health Informatics, User Experience (UX), Wearable Technology, Human-Computer Interaction (HCI), Healthcare Robotics
Skills: Python, SQL, JavaScript/TypeScript, Docker, Git/Version Control, Google Cloud Platform (GCP)

Work Experience –

Data Scientist (Part-time) @ Delfina Care, San Francisco, CA July 2021-Present
- Led the winning submission for the NICHD's Decoding Maternal Morbidity Data Challenge, elevating our startup's visibility by accurately predicting the risk of hypertensive disorders of pregnancy (HDP).
- Conducted end-to-end machine learning model development, including training, validating, and fine-tuning, for early risk stratification of gestational diabetes and HDP in different patient populations.
- Developed and deployed an internal dashboard with a built-in SQL viewer to answer product questions and visualise user enrollment and engagement KPIs over time using Python, Docker, and GCP.

Graduate Researcher @ KITE-Toronto Rehabilitation Institute, Toronto, ON Sept 2020-Present
- Developed a clinical decision support dashboard for outpatient neurorehabilitation, with React, Firebase, and CI/CD pipeline, using user-centred design principles to convert user research into concrete features.
- Conducted a pilot study to evaluate dashboard usability and gathered insights for further iteration.
- Implemented a computer vision pipeline for classifying Activities of Daily Living from wearable cameras to provide contextual information about patient hand use at home for enhanced therapy planning.

Chief Design Officer (Part-time) @ Hikma Health, Sunnyvale, CA Apr 2018-Jun 2022
- Led the product design efforts from concept to deployment of an open-source EHR tailored to physicians serving refugees in low resource settings - deployed in 3 countries with >100,000 patients.

Research Engineering Intern @ Digital Kitchener Innovation Lab, Kitchener, ON Sept 2019-Dec 2019
- Contributed to the research and development of smart city solutions by leveraging Internet of Things (IoT), machine learning, and cloud computing to drive urban innovation and initiative prioritisation.

Software Engineering Intern @ Publicis Sapient, Toronto, ON May 2019-Aug 2019
- Developed an anomaly detection microservice, which included writing a data preprocessing pipeline, training a robust random cut forest model, and deploying a Flask API in Kubernetes for predictions.

Research Assistant (Part-time) @ University of Guelph, Guelph, ON Jan 2019-Apr 2019
- Researched optofluidic lenses to provide tunability of optical parameters with shape and size alterations.

Research Associate @ Harvard Medical School, Boston, MA Jan 2018-Aug 2018
- Investigated machine learning approaches for seizure detection in an animal study using long-term EEG.

Awards & Scholarships –

Canadian Institutes of Health Research, CGS-D, $105,000 CAD 2023-2026
NICHD Decoding Maternal Morbidity Data Challenge Winner, $60,000 USD 2022
Toronto Rehabilitation Institute Student Scholarship, $15,000 CAD 2021-2022
University of Toronto Fellowship, Institute Of Biomedical Engineering, $18,000 CAD 2020-2021
University of Guelph Engineering Co-op Student of the Year, $1,000 CAD 2019
Henry Taub Memorial Scholarship for Academic Excellence, $8,000 USD 2015-2019

Research Contributions –

Peer-Reviewed Publications

- Kadambi, A.*, Bandini, A.*, Ramakalawan, R.D., Hitzig, S.L., & Zariffa, J. (2023). Designing an egocentric video-based dashboard to report hand performance measures for outpatient rehabilitation of cervical spinal cord injury. In press at Topics in Spinal Cord Injury Rehabilitation.
- Kadambi, A., & Zariffa, J. (2023). Providing hand use context for outpatient neurorehabilitation with egocentric object detection. 2023 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI), pp.1-4
- Kadambi, A., Fulcher, I., Venkatesh, K., Schor, J. S., Clapp, M. A., & Wen, T. (2023). Predicting the risk of gestational diabetes using clinical data with statistical and machine learning: a predictive model study. American Journal of Obstetrics & Gynecology MFM, 100965, 100965.
- Kadambi, A., Fulcher, I., Schor, J., Ebrahim, A., Ebrahim, S., & Wen, T. (2023). Using machine learning to predict the risk of developing gestational diabetes using a contemporary cohort. American Journal of Obstetrics and Gynecology, 228(1), S752–S753.
- Kadambi, A., Wen, T., Nguyen, E., Dolisca, S., Ebrahim, S., & Ebrahim, A. (2022). Random forests for accurate prediction of the risk of hypertensive disorders of pregnancy at term. Obstetrics & Gynecology, 139, 60S.
- Buford, A., Kadambi, A., Ebrahim, A., Ebrahim, S., Nguyen, E., & Wen, T. (2022). Cesarean delivery rates among hypertensive birth hospitalizations in urban versus rural hospitals. American Journal of Obstetrics and Gynecology, 226(1), S590–S591.
- Brotherton, T., Brotherton, S., Ashworth, H., Kadambi, A., Ebrahim, H., & Ebrahim, S. (2022). Development of an offline, open-source, electronic health record system for refugee care. Frontiers in Digital Health, 4.
- Bandini, A., Kadambi, A., Ramkalawan, R. D., Hitzig, S. L., & Zariffa, J. (2021). A web-based interface for monitoring hand use in people with cervical spinal cord injury living in the community. The Journal of Spinal Cord Medicine, 44(SUPPL1), S320.
- Ebrahim, S., Ashworth, H., Noah, C., Kadambi, A., Toumi, A., & Chhatwal, J. (2020). Reduction of covid-19 incidence and nonpharmacologic interventions: analysis using a US county-level policy data set. Journal of Medical Internet Research, 22(12), e24614.
- Fumeaux, N. F.*, Ebrahim, S.*, Coughlin, B. F., Kadambi, A., Azmi, A., Xu, J. X., Abou Jaoude, M., Nagaraj, S. B., Thomson, K. E., Newell, T. G., Metcalf, C. S., Wilcox, K. S., Kimchi, E. Y., Moraes, M. F. D., & Cash, S. S. (2020). Accurate detection of spontaneous seizures using a generalized linear model with external validation. Epilepsia.
- Prasad, S., Kadambi, A., Alwehaibi, Y., & Collier, C. M. (2019). Mechanically-tuned optofluidic lenses for in-plane focusing of light. OSA Continuum, 2(9), 2694–2703.

Datasets

- Noah, C., Ebrahim, S., Ashworth, H., Ebrahim, A., Kadambi, A., Pattilachan, T., Kiyasseh, D., Wright, M., Nguyen, E., & Ebrahim, H. (2020). COVID-19 US County Policies Dataset. Hikma Health. Apache 2.0 Licence.