**Seeking a postdoctoral researcher specializing in development of digital biomarkers for the American Life in Realtime (ALiR) Study**

[American Life in Realtime](#) (ALiR) is seeking a talented and motivated postdoctoral researcher with expertise in data science, machine learning, time-series analysis, or person-generated health data. The ideal candidate will have a PhD in Computer Science, Engineering, Biostatistics, Economics, Operations, or a related field, and a strong publication record.

Responsibilities:

- Focus on the development and adaptation of digital biomarkers for detecting changes in health status based on patient-generated data from wearables, longitudinal surveys, and other sensors
- Develop and implement advanced analytical models (AI/ML) to analyze large-scale, longitudinal person-generated health data
- Conduct research on health equity and the generalizability of AI/ML models across diverse populations
- Apply digital biomarkers to health system operations or personalized, just-in-time digital interventions
- Collaborate with a multidisciplinary team of experts from engineering, medicine, computer science, economics, operations, and policy
- Publish research findings in top-tier conferences and journals in the field of machine learning and precision health
- Contribute to the development and maintenance of the ALiR dataset and research infrastructure

Ideal Candidate would have:

- PhD in Engineering, Industrial Engineering, Operations Research, Computer Science, Biostatistics, Economics, or a related field
- Strong expertise in machine learning, feature selection, or time-series analysis
- Experience with using sensor data or person-generated health data for health applications is a plus
- Strong programming skills in Python or other languages for data analytics and a familiarity with data science tools and libraries
- Excellent written and verbal communication skills, and the ability to work effectively in a fast-paced, interdisciplinary, team-based environment
- Strong publication record in peer reviewed journals

Benefits:

- The position will be jointly advised by Drs. [Ritika Chaturvedi](#) and [Sze Suen](#) in collaboration with a multidisciplinary team spanning four USC departments: Engineering, Medicine, Arts and Sciences, and Public Policy, a unique opportunity for interdisciplinary work
- We offer a dynamic and supportive work environment, with opportunities for professional development and advancement.
- This is a 2-year, full-time position on campus at the University of Southern California, with a competitive salary and benefits package. The start date is flexible, but we're looking for someone between now and Fall 2023.

To apply, please submit your CV, a cover letter, and a list of three references to [alir.teammates@gmail.com](mailto:alir.teammates@gmail.com).

About ALiR:

Person-generated health data (PGHD) from smartphones and wearables are invaluable for precision digital health, a field aiming to promote health equity through accessible strategies tailored to an individual's specific context and needs. American Life in Realtime (ALiR) is a benchmark PGHD dataset, cohort, and research infrastructure that seeks to enable exploration of how everyday life affects health in a comprehensive and equitable manner. ALiR's cohort is sociodemographically representative of the adult U.S. population, with an oversample of racial ethnic minorities and/or under-resourced groups, allowing for subgroup specific analyses.

Participants continuously wear study-provided Fitbits and answer frequent electronic surveys about their health and well-being for at least one year, though most continue to participate indefinitely. ALiR's dataset, using FAIR standards (findable, accessible, interoperable, reusable), overlays (1) continuous Fitbit biometrics; (2) in-depth, longitudinal self-reported measures of sociodemographics, social, structural, and environmental exposures, personality, behaviors, and health measured via high-quality, validated instruments; and, (3) geospatially and temporally matched public environmental data on individual time-series.

Ultimately, ALiR is a model for achieving diversity, equity, inclusion, transparency and multi-disciplinary collaboration in precision health. For example, engineers may leverage the platform to test the performance of new hardware or sensors in diverse populations or develop novel digital biomarkers of health change. Methodologists may characterize factors that drive or amplify selection biases, such as social and structural patterning of study participation and attrition, data quality and 'missingness', as well as developing and testing solutions to minimize their impact, such as incentive designs and imputation techniques. Social scientists may investigate the clustering and importance of social determinants in various populations to prioritize public health investments. Behavioral researchers may develop just-in-time interventions where deviations from individual-specific baselines (digital biomarkers) trigger automated 'nudges' and/or suggestions, such as passive detection of influenza-like symptoms via Fitbit data, which triggers a recommendation for SARS-CoV-2 testing. Operations researchers may evaluate the utility of caseworker or health system integrations.

This position is a unique, multidisciplinary opportunity for postdoctoral researchers to make a significant impact in the field of precision health and contribute to improving health equity for marginalized populations.