### Mike Merrill

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#### **RESEARCH**

Interests: Data science, ubiquitous computing, and digital interventions in the context of behavioral health.

## HealthRhythms | New York, New York | Data Scientist

September 2016 – Present

- Acted as the company's sole data scientist and backend developer for six months
- Developed novel algorithms for the measurement of deviation from behavioral routines
- Pioneered a state-of-the-art propriety method for the prediction of sleep onset and waketime from smartphone data
- Advised the development, deployment, and management of a dozen clinical mobile sensing studies for academic and pharmaceutical clients
- Engineered an AWS-based feature generation pipeline which reliably processes sensor data from hundreds of participants every day
- Created Angular-based data visualizations and dashboards for deployment in clinical contexts
- Represented the company at conferences, sales meetings, and venture capital pitches

## People Aware Computing Lab | Cornell University | Advised by Tanzeem Choudhury

*June 2015 – May 2017* 

- Co-authored three research papers on applied machine learning and psychiatry for leading journals and conferences
- Applied Android's mobile sensing API to discover previously unknown insights into the private social behaviors of schizophrenics through cellphone metadata
- Leveraged DBSCAN and COP-KMeans clustering to analyze patterns in GPS mobility traces
- Managed local enrollment for MyCampusLife: a collaboration between Carnegie Mellon, Cornell,
  Dartmouth, and Georgia Tech to monitor the mental health and productivity of students

## **Ubiquitous Computing Lab** | Carnegie Mellon University | Advised by Anind Dey

June 2016 – August 2017

- Began an ongoing longitudinal research project to assess the formation of social cohorts through cellphone data
- Developed a SQL-based framework using Python's pandas for analyzing the digital behavior of college students, with the goal of predicting and monitoring depression, stress, and underperformance on campus

## Wellness Institute | Buffalo, New York | Summer Intern

Summer 2014

- Implemented a sentiment analysis engine to determine the mood of a region based on geo-tagged tweets
- Leveraged local data to advise the city government on community building policies and resources

### **PUBLICATIONS AND POSTERS**

- D. Ben-Zeev, et al., Michael Merrill. "CrossCheck: Integrating mobile self-report, behavioral sensing, and smartphone use to identify digital indicators of psychotic relapse." *Psychiatric rehabilitation journal*. 2017;40(3):266-275.
- R. Wang, et al., Michael Merrill. "CrossCheck: Toward passive sensing and detection of mental health challenges in people with schizophrenia". Paper presented at Ubicomp 2016, Heidelberg, Germany on September 14, 2016.
- V. Tseng, et al., Michael Merrill. "Assessing mental health issues on college campuses: preliminary findings from a pilot study." Paper presented at Ubicomp Workshop 2016, Heidelberg, Germany on September 12, 2016.
- E. Frank, Michael Merrill, et al. "Sensing Depression: Using Smartphone Sensors to Predict Changes in Depression Severity". Poster presented at The 56th Annual Meeting of the American College of Neuropsychopharmacology, Palm Springs, California on December 4, 2017.
- E. Frank, et al., Michael Merrill. "Continuous Behavioral Data as a Potential Depression Biomarker". Poster presented at The 55th Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, Florida on December 6, 2016.

#### **EDUCATION**

Cornell University, Ithaca, New York

May 2017

# College of Agriculture and Life Sciences

Bachelor of Science in Information Science

- Magna Cum Laude
- Winner of the department's "Excellence in Research" award

**Technologies** (in order of decreasing familiarity): Python data science stack (pandas, SciPy, numpy, iPython, scikit-learn), AWS (S3, DynamoDB, Athena, Glue), Plotly, Arduino, CAD, 3D printing, laser cutting, JavaScript, D3