

PROFILE

I'm an experienced data scientist well versed in extracting meaning from a wide variety of data structures, from millions of GPS tracks to app usage data to consumer surveys. My current work is developing both physiological and psychographic models of consumer behavior and translating those models into tangible business impacts.

SKILLS

- 10 years of statistics, machine learning algorithms, experimental design, and signal processing in research and business settings
- SQL (Redshift, MYSQL, BigQuery), Python (Pandas, Sci-kit Learn, Basemap, Matplotlib, Numpy & Scipy), MATLAB, PySPARK, Qubole, Google Analytics, Tableau

WORK HISTORY

SENIOR DATA SCIENTIST, UNDER ARMOUR CONNECTED FITNESS

2015-PRESENT

Led cross-functional teams of program managers, software developers, and business analysts to develop insights from fitness and app data from 170 million users.

- Built a classifier using DBSCAN and Ramer Douglas Puecker to automatically identify GPS tracks as participants in running races, ultimately making a world-wide event dashboard in Tableau (patent pending)
- Applied a random forest classifier to a combined dataset of workout data and App usage (Google Analytics – BigQuery) to develop a predictive model of engagement
- Built a detection method for determining cheaters within virtual challenges
- Developed consumer segmentation cohorts from a combined dataset of GPS fitness data and consumer surveys using PCA and clustering methods

PERFORMANCE DATA SCIENTIST, UNDER ARMOUR CONNECTED FITNESS

2013-2015

Worked with sport scientists across Under Armour on research and development efforts concerning both small datasets (hundreds) of high-end physiological performance data and large datasets (millions) of consumer fitness data.

- Built a prototype running route recommendation service by encoding GPS tracks into a graph database (patent pending)
- Developed a client-facing recovery dashboard for the University of Notre Dame Men's Soccer Team
- Developed and validated energy expenditure algorithms that were implemented on Under Armour's first wearable activity tracker

R & D ENGINEER, MAPMYFITNESS, AUSTIN, TX**2012-2013**

Developed and validated state-of-the-art algorithms for extracting speed, distance, calories, and other physiological parameters from noisy (GPS) fitness data.

- Developed a method for running gait analysis using neuroscience-inspired feature extraction methods on smartphone accelerometer data (patent pending)
- Compared four different optimized methods of extracting elevation gain data from noisy GPS tracks
- Created [visualizations](#) for promotional materials and presentations that were presented at SXSW

RESEARCH ENGINEER, CENTER FOR PERCEPTUAL SYSTEMS, UT AUSTIN**2008-2012**

Primary developer of electrophysiological experiment software, which included hardware/software integration, real-time programming, & solving human factors issues.

- Developed PLDAPS – A MATLAB toolbox for real-time electrophysiology experiments with awake behaving monkeys
- Developed a Bayesian ideal observer model that demonstrated that people account for individual memory limitations when optimizing their information seeking behavior

EDUCATION

- **PHD, COGNITIVE PSYCHOLOGY, UNIVERSITY OF TEXAS AT AUSTIN**
- **MS, COGNITIVE PSYCHOLOGY, UNIVERSITY OF TEXAS AT AUSTIN**
- **SCB, APPLIED MATHEMATICS: SCIENTIFIC COMPUTING, BROWN UNIVERSITY**