Amanda Tsai
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EDUCATION

Columbia University Mailman School of Public Health — New York, NY
Master of Science, Biostatistics — Expected May 2022

University of California, Los Angeles — Los Angeles, CA
Bachelor of Science, Mathematics and Economics major — June 2019
Specialization in Computing

RELEVANT COURSEWORK

Data Science I, Biostatistical Methods I, Probability I II, Analysis I II, Optimization, Algorithms, Statistical Programming, Linear Algebra, Linear and Nonlinear Systems of Differential Equations, Econometrics

SKILLS

Coding: Python, R, C++, Java, Stata, SQL, data structures, algorithms
Languages: English (fluent), Mandarin Chinese (fluent)
Others: Microsoft Excel, Photoshop

SELECTED PROJECTS

Breath-Sensing Early Lung Cancer Screening System — Binghamton, NY
FlexSurface Inc. — Jan 2019 - July 2019

- Analyzed signals from sensing arrays with pattern recognition and machine learning to precisely differentiate between normal individuals and patients
- Assisted in the development of a mobile app that collects data from a breath-sensing device equipped with nanoparticle-structured thin film and provides dependable tracking and display of test results over time.
- Compared multiple statistical methods in the analyzation of data collected from the mobile app

Significant Mapping for Clinical Case Reports — Los Angeles, CA
NIH Center of Excellence for Big Data Computing — June 2018 – Dec 2018

- Performed text mining, data extraction and cleaning of 1.8 million clinical case reports
- Developed functions for a R Shiny App that provides visualization of the worldwide geographic distribution of clinical case reports according to MeSH terms
- Proposed and upgraded R Shiny App to now support mapping of several diseases and MeSH terms from predetermined datasets and datasets generated from PMID/phrase searches from PubMed
- Determined association between medical terms and occurrence of diseases using statistical methods

Number Recognition For Game Solver — Nov 2018 - Jan 2019

- Captured 4-numbers-game screen display with Raspberry Pi and a connected monitor
- Developed program to realign the game capture, recognize only the relevant numbers and produce accurate solutions

Facial Recognition Music Player — Sept 2018 - Dec 2018

- Developed recognition program to allow user to shuffle through music playlist with facial recognition of smiles, frowns, and winks

Carbon Fiber Electrode Cell Amperometry — Seattle, WA
University of Washington, Electrochemistry Group — July 2016 - Sept 2016

- Fabricated carbon fiber electrodes and conducted cell amperometry experiments to collect single-cell measurements
- Analyzed carbon fiber electrode characterization data to determine performance of electrodes