

YILIN YIN

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Education

Northeastern University - Boston, MA Ph.D. of Industrial Engineering	Current GPA 3.89/4
Northeastern University - Boston, MA Master of Science in Bioinformatics Data Science Certificate	Dec 2017 GPA 3.91/4
Purdue University - West Lafayette, IN Bachelor of Science in Mathematics and Statistics Minor in Biology	Aug 2015

Posters and Publications

Yin, Y., Chou, C.-A (2020). Mortality Prediction After Discharge From the Intensive Care Unit Using CHF-AR-HMM, *Machine Learning Research* (Submitted)

Yin, Y., Chou, C.-A. Hidden Markov Chain Modeling and Analysis for ICU Mortality Prediction, Poster Presentation at *Research Innovation Scholarship Entrepreneurship*. April 9, 2020

Yin, Y., Chou, C.-A. Cumulative Hazard Function Based Hidden Markov Model for ICU Mortality Prediction, Poster Presentation at *7th MIE Department Research Poster Expo*. Dec 5, 2019

Skills

Analysis Tools: R, Perl, Python, SQL, MongoDB, SAS, MATLAB, Java, SPSS and Minitab

Teaching Experience

Northeastern University Teaching Assistant Statistics Methods in Engineering Healthcare Systems Modeling and Analysis Data Mining and Machine Learning	Fall 2019 Spring 2019 Spring 2017
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Experience

Northeastern University, Mechanical and Industrial Engineering Department Research Assistant ● Preprocessing and cleaning the clinical materials with data management methods and statistical tests. ● Searching the time-based patterns of the severity of disease classification system score to predict the mortality of ICU patients.	Boston, MA Current
Harvard School of Public Health, Microbiome Analysis Core Research Assistant ● Analyzed the metadata, OTU, taxa, pathway abundance and phylogenetic tree data with PCoA mapping, PERMANOVA, MaAsLin workflow, and Diversity test. As a result, the visualization report expedited the project to meet the grant's deadline. ● Collected and analyzed the raw metagenomic data with Bio-bakery workflow.	Boston, MA May 2018 – Aug 2018
Halo Solution. Inc Part-time Medical Data Analyst ● Built up MySQL database from MIMIC medical diagnosis data. And connected R access for further analysis.	Boston, MA Mar 2018 – Aug 2018

- Designed the algorithm to retrieve the sentences with key contents from medical text note.
- Conducted the LSTM neural network to generate the patient note.
- Conducted Naïve Bayes Classifier based on ICD-9 code data. The accuracy was increased 5% from 94% to 99%.
- Conducted and visualized term frequency analysis, k-means and cos similarity on word2vec model for notes cluster.
- Conducted and visualized t-SNE and N-gram to find the connection with keywords.

Affect Mental Health

Boston, MA

Co-op Data Analyst

Jun 2017 – Dec 2017

- Analyzed the patient social data with Latent Dirichlet allocation and network methods to get the topic modeling for the company to set up product workflow. As a result, the visualization report expedited the agenda by two weeks.
- Collected and analyzed the mental health care cost dataset to build up the statistical model of cost prediction, which enhanced efficiency 70% by filtering the invalid features and identified the key demographic variables for future decision making.
- Interviewed patients with mental health disorder and recorded the information to enrich the database of the patients.
- Managed and analyzed business data for company development.
- Prepared the presentation, which persuaded the investor to proceed in the next step of the program.

University of Utah School of Medicine, Division of Epidemiology

Salt Lake City, UT

Internship Research Assistant

Aug 2015- Nov 2015

- Analyzed breast cancer variables in demographic and oncologic form by using R to realize statistics models including the Cox proportional hazard model, odds ratio, ANCOVA, propensity analysis and other methods.
- Analyzed the correlation between breast cancer patients' personal information with surgery, tumor stages and other personal or pathologic index.
- Participated in project design conferences and met the client to discuss the process.
- Completed statistical reports and presented to the clients.