

Jong M. Shin



Professional Experience

Research Consultant July 2021 to Current Progl.ai, Baltimore, MD

- Study the extrapolative behavior of various ML algorithms implemented using Python sklearn package
- Build an web app to conduct human behavioral experiments using **HTML**, **Javascript and Flask**, and backend database management using **SQLAIchemy** hosted on heroku
- Prepare the NeurIPS 2021 workshop on inductive bias of machine extrapolative behavior

- Developed a web application that automates the process of causal inference using **React and Typescript** to power front-end and **python Flask** to service back-end in the context of human trafficking and COVID-19
- Built and designed an end-to-end pipeline of causal inference using Python DoWhy package to deploy a
 research application product branded as ShowWhy
- Coordinated a team of 6 engineers of different technical background to build the initial ShowWhy application

- Developed a data preparation pipeline for JHU COVID-19 initiative using probabilistic linkage methods to provide backend database management in R
- Built a data analytic pipeline to parse hospital datasets via **causal inference** methods to provide a clinical data science guideline for COVID-19 vaccination distribution

- Implemented the deep learning framework for radon transformation used in CT image reconstruction known as iRadonMAP in Matlab
- Produced augmented image dataset from ImageNet to train iRandomMAP algorithm for training the network

- Built an analytical pipeline to parse out biometric signals from the **multivariate time-series** hologram signal datasets in **python** using **sklearn** and **tensorflow**
- Cleaned and pre-processed real-world multimodal datasets using pandas and hyppo

- Built a prediction pipeline for HIV detection by HIV antibody titer in Python using pandas and sklearn
- Conducted parametric/nonparametric multivariate linear regression analysis of the national omics datasets such as metabolomics and proteomics using **Python** and **R**

• Built automated fourier transformed signal detection program in **Matlab** for mouse behavioral experiments

Recent Publications

- 1. Interclass GPCR heteromerization affects localization and trafficking (2020), Science Signaling
- 2. Fully automated head-twitch detection system for the study of 5-HT2A receptor pharmacology in vivo (2019), Scientific Reports

Education

Skills

Python (Numpy, Pandas, Sklearn, Flask, Pytorch, DoWhy), SQL, Git, R, Matlab, Typescript, React, HTML