

Joong Ho (Joshua) Choi

joonghoc@andrew.cmu.edu | 412-636-1977 | https://jc-78.github.io/JC_Intro_Site/

EDUCATION

Carnegie Mellon University, Pittsburgh PA

B.S. in Statistics & Machine Learning, QPA: 3.83/4.00.

Minors: Business Analytics & Optimization, Human-Computer Interaction

May 2023

Awards:

- Medal of Honor from Singapore Armed Forces, Republic of Singapore Navy (August 2019).
- CMU's QSSS—Quantitative Social Science Scholars Program — (Fall 2019-Spring 2023).
- 1st Place for CMU Undergraduate Consulting Spring Case Competition (March 2021)

SKILLS

Computer: Python (Sklearn, Pandas, Numpy, TensorFlow, NLTK, Flask, PySpark), R, C, JavaScript (React, Redux, D3.js), Git, SQL (Postgres, MySQL), NoSQL (MongoDB, Cassandra), AWS (S3, Redshift, RDS, Lambda, Athena, SageMaker, EC2, ELB), Azure ML Studio, Google (AutoML, Analytics, BigQuery), Docker, Kubernetes, MLflow, dbt, MATLAB, Tableau, Power BI

CODING PROJECTS

- Built parallel computing solutions for competitive-pricing constrained optimization algorithms and researched graphical lasso's use in estimating a sparse substitution matrix in product network with Zoey Jiang (CMU Prof. of Business Tech). July 2021-Sept 2021
- Built FixMatch (SOTA semi-supervised pipeline) to predict a student's GPA for CMU Health Research Lab. Jun 2021-Aug 2021
- Developed neural network, KNN, SVM to help junior hockey teams predict and maximize their scoring potentials. Mar-May 2021
- Coded video data for behavioral and speech recognition in CMU BAR (Behavioral Alcohol Research) study. Oct 2019-Dec 2020

WORK EXPERIENCE

Behavior, Software Development and Data Science Intern(Awarded CMU Dietrich Scholarship)

May–Aug 2021

- Developed deep auto-encoders and used PCA, T-SNE, UMAP, PaCMAP for data visualization of opioid craving relapses.
- Built Random Forest to identify/update potential mislabels and XGBoost, LightGBM, CatBoost to predict the opioid craving onset.
- Performed feature crossing and feature selections to improve models' accuracies and minimize the Google Cloud Function cost.
- Contributed to developing a mobile application using JavaScript, Node Js, React Js, Redux, Chakra UI and Firebase.

Freelance SWE/Data Analyst

Dec 2020-Apr 2021

- Performed Fourier Spectral Analysis on audio clips of lung diseases and optimized code performance through multi-processing.
- Performed data wrangling, analysis tasks (ex. A/B tests, HAQ-DI) on clinical datasets for a pharmaceutical company in US.
- Implemented doubly linked list and hash-map to design a cache with LRU eviction policy for reducing server response time and wrote optimized Hadoop MapReduce codes for more rapid data analysis for a start-up.

Singapore Armed Forces, Changi Naval Base. 3rd Sergeant (SWE, ML engineer)

Oct 2017-Aug 2019

- Developed an app (via Python Kivy, Travis CI) that accounts for man-strength of different countries' warships.
- Built regression models using machine learning algorithms (Lasso, Ridge, ElasticNet, Random Forest) and applied optimization techniques to raise the firing accuracy of A-gun on a Tank Landing Ship of Republic of Singapore Navy.
- Developed the inference pipelines for classification models, via Azure ML studio and Google Cloud AutoML Vision, and deployed them to assist navigation team and lookouts in identifying potential hazards, such as submarines.

Yuuzoo Corp, Marketing Department, Singapore. Data Analyst Intern

May – Aug 2016

- Utilized web scraping techniques in R to extract and present competitors' data using Tableau and Power BI.
- Optimized MySQL database performance by indexing, schema design and memory caching to deal with scale and improve throughput, while strengthening the database against SQL injections.

LEADERSHIP ACTIVITIES

CMU Student Body Vice President for Organizations

Aug 2019-Present

- Led the new student organization recognition process and annual re-recognition for 300+ recognized student organizations.

CMU Students Using Data for Social-Good, Project Manager

Sep 2020-Present

- Led the development of COVID_19 Mobile Application for Elizabeth Glaser Pediatric Aids Foundation via PowerApps.
- Analyzed data regarding youth incarceration, school to prison pipeline and evaluated discipline policies for Pittsburgh Police.

CMU Undergraduate Consulting Club, Pro Bono Consultant

Feb 2021-May 2021

- Analyzed competitors' finance models and implemented pricing strategies for revenue growth for BizCatcher—a M&A firm.

CMU Game Creation Society, Project Lead

Aug 2020-Dec 2020

- Led the development of 2D Unity zombie shooter game with complex game AI and vast maps through Scrum methodology.