Fanglu (Louie) Yang

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EDUCATION

University of Toronto   Sep 2023 - 2027
HBSc - Co-op Specialist in **Statistics** - Statistical Machine Learning and Data Science Stream
    - Major in **Computer Science**, Minor in **Economics**

Courses: Intro to Computer Science I and II, System Programming, Software Design, Computation Theory, Calculus I and II, Linear Algebra I and II, Discrete Mathematics, Linear Optimization, Probability, Intro to Data Science, Microeconomics.
Awards: E-Fund Entrance Scholarship of Excellence - 10,000 CAD
        2023-2024 University of Toronto Scarborough Dean's List

SKILLS

Languages: Python (Pandas, NumPy, Matplotlib, Tensorflow), C, Java, Javascript, HTML/CSS, R, SQL
Skills/Tools: Git, VS Code, Office Suite, React, Arduino, RStudio, PowerBI, Tableau, Microsoft Azure, Jupyter Notebook, OpenRefine, PostgreSQL, 3D-Modeling, Data Analysis (Regression, Clustering, Cross-Validation, Hypothesis Testing, Bootstrap, K-Fold, Decision Tree, Random Forest, XGBoost, Sci-kit Learn)

PROJECTS

Car Evaluation Prediction ML Model Using XGBoost Classifier   Feb 2025
Analyzed a 1000+ entries dataset sourced from the UCI Machine Learning Repository

- Achieved **98% data completeness** by handling missing values and applying **label encoding** on categorical features using **Pandas** and **NumPy**
- Trained an **XGBoost classifier** selected from Sci-kit Learn followed by **hyperparameter tuning** using **GridSearchCV**, achieving a **validation accuracy of 98.92%**
- **Visualized** feature importance using **Matplotlib** using a bar chart highlighting top predictors to car acceptability.

Planetze -- A carbon-tracking Sustainability App (UI/UX)   Dec 2024 - Jan 2025
Designed an Android app that tracks, reduces, and offsets carbon footprint and offers real-time data and personalized insights

- Implemented **SQL** for local storage of user data and **Firebase** for **real-time database** operations such as new registrations and user authentication.
- Utilized **Java** for all backend logistics, including data calculations and **UI** control, and for comprehensive **unit tests** using Mockito and JUnit to ensure the reliability of login functionalities and data handling.
- Conducted the front-end using **XML** within Android Studio for interactive and engaging **user experience**.

Statistical Analysis on Research Project Investments by the MCU   Mar 2024 - Apr 2024
Analyzed a 20-year (2004-2024) dataset from Ministry of Colleges and Universities (MCU)

- Demonstrated data analysis skills through analyzing and visualizing investment data with **plots, graphs, T-test and Var-test** using **RStudio**.
- Conducted **data cleaning** and **data wrangling** on a dataset (from open.toronto.ca) with **5000+** entries.
- Applied statistical models including bootstrap, linear regression, cross-validation and logistic regression with **81.7%** accuracy

Piano Gesture Corrector based on **3D printing** and **Arduino**   Apr 2021 - Oct 2021
3rd Place in Shanghai Youth Science and Technology Innovation Competition & Shanghai Future Science Star

- **3D modelled & printed** multiple versions of piano gesture corrector using **Autodesk & Gems**.
- Applied **Arduino** for coding an **ultrasonic sensor** and a **buzzer** to provide real-time detection and alert , resulting in **55% increase** in stability of gesture and wrist curve

EXPERIENCE

Research Assistant   Jun 2021 - Nov 2021
Shanghai Institute of Technical Physics, Chinese Academy of Sciences

- Designed a **flexible sensor** which recognizes **real-time** gestures through angle and curve detection aimed at improving gestures of piano beginners.
- Refined my personal scientific project with proficient application in **machine vision, image recognition and 3D modeling.**

VP of Technology   Aug 2024 - Present
BACSA (Biotechnology and Computer Science Association at University of Toronto)

- **Led** a team of **5** directors of organizing major tech events such as tech conferences, bioinformatics coding competition, etc.
- Organized **two computer science workshops** on integrating **Python** skills into biology researches.
- Implemented **club website** building, maintaining and monthly updates using **HTML, CSS and JavaScript**

Director of Technology   Sep 2024 - Present
CSEC (Computer Science Enrichment Club at University of Toronto)

- Assisted **workshops and seminars** themed on **git**, academics, etc.
- Outstanding **interpersonal skills** through **weekly** club meetings and coordinating club events.