TONG WU

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EDUCATION

Washington University in St. Louis (WUSTL)   St. Louis, MO, USA

Master of Information Systems Management   Fall 2021 - Winter 2022

- **Relevant Coursework:** Foundations of Analytics, Optimization, IT Architecture & Infrastructure, Applications of Deep Neural Networks, Enterprise Data Management, IT Governance & Risk Management

China Agricultural University (CAU)   Beijing, PRC

Bachelor of Computer Science and Technology, minor in Finance   Fall 2016 - Fall 2020

- **Relevant Coursework:** Artificial Intelligence, Machine Learning, Principles of Database Systems, Probability Theory & Mathematical Statistics, Data Structure, Computer Programming
- **Honor**: Meritorious Winner for the Mathematical Contest in Modeling (MCM) 2019

RESEARCH & PROJECTS

AI for Healthcare   Fall 2022 – Present

Udacity project: Machine Learning, Deep Learning, Wearable Device

- Building, evaluating, and integrating predictive models that have the power to transform patient outcomes;
- Classifying and segmenting 2D and 3D medical images to augment diagnosis;
- Modeling patient outcomes with electronic health records to optimize clinical trial testing decisions;
- Developing a Pulse Rate Algorithm that uses data collected from wearable devices to estimate the wearer's pulse rate in the presence of motion.

Traveling Salesmen Computer Vision [Website]   Spring 2022 - Summer 2022

Kaggle Competition: Machine Learning, Image Processing, Computer Vision

- Evaluated Convolution Neural Networks (CNN), ResNet and image processing, used a simple fully connected network of Flatten -> Dense 1504-752-1, significantly improving model scores;
- Used early stopping helps avoid overfitting, divided the channels, and filtered the pixel values into 3 channels * 256 bins to produce the best result;
- Contributed code to the Kaggle website detailing our team's solution and earned an A+ in the DNN course.

Cause of Mortality and Medical Transcript Analysis   Summer 2021 - Winter 2021

Master's *Analytics course project: Natural Language Processing, Machine Learning*

- Investigated major death causes and medical transcript to predict disease ICD code with Python, and visualized selected features with Seaborn to analyze the trend and distribution of mortality;
- Trained classification model to predict survival conditions with an accuracy of 93.2% and AUC of 0.723;
- Performed disease prediction by Natural Language Toolkit (NLTK) with preprocessed documents and achieved an accuracy of 89.9%.

Student's Course Sharing & Evaluation Website   Spring 2020 - Summer 2020

Undergraduate practical training:

- Collected the campus information and built a forum website for students to communicate and access immediate information;
- Employed Bootstrap and HTML+CSS to design the front-end;
- Created database back-ends to store students' annual evaluation information and generate annual candidate list of scholarship winners based on each student's performance data in class, grade, and major units;
- Spearheaded all design elements, templates, and website consistency.

Greenhouse Vegetable Information Management System   Fall 2019 - Summer 2020

Undergraduate Graduation Design:

- Developed an Android app to provide information management system for the greenhouse vegetable planting process, deployed an MVP within 3 months;
- Implemented robust app architectures and complex information interfaces, improving the interaction between the system and the users;
- Verified the code for robustness; executed edge case, usability, and general reliability analysis;

- Fixed bugs and improved application performance.

PUBLICATIONS

- Hong Sun, Tong Wu, "Design of Freshness Detection Device for Fresh-cut Fruit Using Visible/Near-infrared Spectroscopy" in *Transactions of the Chinese Society for Agricultural Machinery*, pp. 1000-1289. [Paper]

INDUSTRY EXPERIENCE

Lyfe Health, a start-up company supported by Skandalaris Center [Website]   St. Louis, MO
Intern, Software Developer   Summer 2022 - Fall 2022

- Developed a mobile platform for Lyfe Health: a place where users consolidate their scattered health information into one, from start to finish (research, design, test, implement) as lead designer with a team of three fellows;
- Designed elegant flows and interactions for Lyfe Health mobile platform, attracted 1000+ users to register after the platform launched;
- Improved the end-to-end experience of Lyfe Health Platform by conducting usability reviews, identified UX issues, and proposed design recommendations, accomplished "Travel & College Mode" to provide emergency plans for specific user groups.

China International Capital Corporation Limited (CICC)   Remote
Intern, Quantitative Department   Summer 2020 - Winter 2020

- Assisted internal mentor to improve the existing modeling framework in a collaborative software environment;
- Participated in quantitative research, including liquidity analysis, risk profile, stress testing and scenario analysis;
- Provided data analysis of sales, income, and market growth trends of Tsinghua Holding Company, performed in-depth analysis on the default of Brilliance Auto.

STUDENT EXPERIENCE

Enterprise Data Management Class   WUSTL, MO
Teaching Assistant for Prof. Tawfiq Bafra   Fall 2022 - Winter 2022

- Graded all weekly assignments, provided regular feedback to students, and calculated grades;
- Collaborated with Prof. Tawfiq to identify students' issues and recommend solutions;
- Reviewed class materials with students on a one-on-one basis or in small groups during each week's office hours.

Information & Electrical Engineering College (CIEE)   CAU, Beijing
Research Assistant for Dr. Hong Sun   Summer 2018 - Fall 2019

- Developed a freshness detection device for fresh-cut fruit, using visible/ near-infrared spectroscopy;
- Used the Kernel function as the support vector machine of Gaussian Kernel Function (RBF) to establish the apple freshness visibility/ near infrared spectrum detection hierarchical model;
- Gathered data via literature research, online surveys, and in-person interview, improved equipment design, and became the highest rated program in 2019
- Drafted study briefs and conference posters & presentations, and co-published one journal article and a patent.

SKILLS

- **Programming Language:** Python (TensorFlow, NumPy, Pandas, Keras), C, C++, Java, R
- **Software:** Figma, HTML, CSS, JavaScript, VS Code, Android Studio, GitHub, Photoshop
- **Database:** MySQL, Google Firebase