

WEN-KAI, TSAI

Contact: (626) 348-9330 | kevintsa15923@gmail.com | Los Angeles, CA

About Me: <https://thisiswenkai.blogspot.com/p/about-me.html>

<https://github.com/k11tqa25> · <http://www.linkedin.com/in/wenkai-tsai>

Position: C# Software Engineer | WinForms, WPF | Web Dev.

EXPERIENCE

2021 – CURRENT

DATA ANALYST/ FRONT-END, BRANCHE, INC.

- Queried and analyzed data from MySQL database with Python sqlalchemy library.
- Administered semantic NLP with sentence-BERT library for text embedding and item recommendations.
- Built a RESTful API with Python Flask to return the result.
- Developed frontend functionalities with ReactJS + Redux.
- Experienced with github version control with the team.

2017 – 2019, 2020 SUMMER

SOFTWARE ENGINEER, YOUNG OPTICS, INC.

- Built desktop applications with C# WinForms/ WPF and Python PyQt for our clients and product line; accomplished multiple projects for occasional requests from the team or clients while continuing on developing a long-term project as mentioned below.
- Proposed and completed a long-term project that integrated all image calibration applications that I have made into one application, syncing controls for multiple devices (e.g., CMOS, Linear Motor, Power meter...). The application was massively used in our product line for its proven quality. The code was refactored during the development to be more maintainable for my successors.
- Devised a new algorithm for image contrast measurement (CTF) with a mathematical approach; a new way of calibrating the image distortion by conquering the vision-motion tasks; and a new automated way of image power measurement.
- Designed a .Net Standard Logger Manager library and a Task-Based State Machine library for my team. The libraries were built with builder pattern, strategy pattern, singleton pattern, and multithread programming.
- Experienced with C# image processing with EmguCV and Python Pillow (for image quality assessment and image calibration)
- Be promoted within less than a year for great problem-solving skills; trained new team members.
- See more from here: <https://thisiswenkai.blogspot.com/2019/08/optics-company.html>

EDUCATION

2019 - 2021

DAYA ANALYTICS, UNIVERSITY OF SOUTHERN CALIFORNIA

Master's degree;

- Compared ML models (Linear Regression, Logistic Regression, SVM, Decision Tree, Random Forest, XGBoost, NN), performed hyperparameter tuning on all models and practiced cross-validation for model selection.
- Built an NLP-based Recommender System to recommend a stand-up comedian from their scripts and user comments on videos. Implemented sentence embedding for content-based filtering, SVD and matrix completion for collaborative and compared the results of different types of unsupervised learning (Latent Dirichlet Allocation, Gaussian Mixture Model, and KNN.)
- Designed an AI agent to play checkers (implemented with ab-pruning algorithm + arc constraints.)

- Designed a snowflakes schema for a relational database; exercised complex SQL queries that joined multiple tables from a PostgreSQL database.

2013 - 2017

MECHANICAL ENGINEERING, NATION TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

GPA 3.91/4.0 (Summa Cum Laude)

OTHERS

- C# Xamarin App development – an application for memorizing vocabulary.
- React Native App development – an in-progress application for my church.

SKILLS

- Python Data Mining / ML / Visualization
(Experienced with Sklearn, Numpy, Pandas, Keras, Scipy, Plotly, Matplotlib, Seaborn)
- Predictive Analysis/ Hypothesis Test
- MySQL, PostgreSQL
- C#/ Python Desktop Application Development
- OOP/ SOLID principle/ Design Patterns
- Multithread programming
- Image processing
- HTML/CSS/ReactJS