

# TZU-HAN LIN

🏠 <https://tzuhan2424.github.io/>

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## Education

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### Kean University

Jan. 2022 – present

MS, Computer Information System, GPA: 4.0

Union, NJ, USA

### National Tsing Hua University

Sep. 2013 – June 2017

BS, Medical Science

Hsinchu, Taiwan

## Experience

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### Strategic analytics & data illumination - Kean University

Sep 2023 – present

Graduate Assistant

Union, NJ

- Created a comprehensive full-stack framework tailored to efficiently manage diverse departmental data for the Integrated Postsecondary Education Data System (IPEDS).
- Developed a data-entry interface with bootstrap and implemented robust data-integrity checks to ensure data accuracy and reliability.
- Designed a flexible database schema to seamlessly store multi-year data for historical tracking and analysis, while utilizing ASP.NET to construct a robust and scalable backend system.

### Computer science department, Kean University

Sep 2022 – May 2023

Programming Tutor

Union, NJ

- Proficient in resolving student challenges involving database management, data structures, Java and Python

## Research

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### Weakly-Supervised Tumor Image Segmentation Framework

May. 2023 - present

- Created a weakly-supervised framework for tumor image segmentation that integrates various components to enhance accuracy and robustness
- Utilized Class Activation Map (CAM) for identifying critical tumor regions
- Refine Selective Search results to generate accurate region-of-interest (ROI) candidates
- Leveraged the Segment Anything (SA) model to create pseudo-labels
- Applied semi-supervised Mean-Teacher techniques to refine the model trained with pseudo-labels, enhancing segmentation accuracy
- Conducted comprehensive evaluations, benchmarking the framework against other weakly-supervised and fully-supervised methods

### The impact of household income, education on Covid-19 deaths

May-Aug 2022

- Designed and developed PHP programs to extract data from a database and visualize the results
- Created algorithms and Python programs to fetch database data, enabling automatic computation of statistical results with varying inputs
- Designed and executed SQL queries to generate filtered and aggregated datasets from multiple tables within a MySQL database

## Projects

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### Mars terrain type segmentation with novel edge detection | *Python, Pytorch*

- Performed comparative analysis between a Fully Convolutional Network (FCN) and a custom FCN with edge feature channel for image segmentation, focusing on Mars terrain type

### Online Banking System | *HTML/CSS, PHP, MySQL, Linux*

- Designed and developed a user-friendly online banking system website enabling secure user login and seamless transaction processing.
- Implemented PHP-based data validation processes to enhance database security and integrity by ensuring the integrity and correctness of data before insertion.

### Analysis of job hiring trends across diverse categories during the pandemic | *Python, Pandas*

- Implemented a web scraper for LinkedIn to collect hiring data
- Conducted pandemic-era job category hiring analysis with data visualization

## Technical Skills

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**Languages:** Python, Java, PHP, HTML/CSS, C#, JavaScript, MySQL, MS SQL

**Deep Learning Framework:** Pytorch

**Package:** Scikit, Numpy, OpenCV, Pillow, Matplotlib, Pandas

**Technologies/Web Frameworks:** Docker, Git, Linux, Bootstrap, Flask, ASP.NET