

# Tsai-Chen Hsieh

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## EDUCATION

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### MS in Computer Science

*Columbia University*

Sep. 2022 – Dec. 2023

*New York, USA*

### BS in Management Information Systems (GPA: 3.94 / 4.3)

*National Chengchi University*

Sep. 2017 – Jan. 2022

*Taipei, Taiwan*

- Academic excellence award (top 2%) for the spring semester of 2020
- Relevant coursework: Algorithms, ConvNet & Visual Recognition, Database Management Systems, Data Structure, Data Science (Machine Learning), Operating System, Programming Language (Object-oriented Programming)

## TECHNICAL SKILLS

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- **Programming:** Python, C++, R, Java, HTML, CSS, SQL, PHP, JavaScript
- **Frameworks/Libraries:** Flask, OpenCV, Scikit-learn, Pandas, NumPy, Shiny Apps, Paho, Highcharts, TensorFlow
- **Tools:** Git/Gitlab, MySQL, Postman, PuTTY, Linux (Ubuntu Server), Docker, Power BI, Jekyll
- **Certification:** Microsoft Azure Fundamentals (May 2020)

## WORK EXPERIENCE

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### Cybersecurity Software Engineering Intern

*BlockChain Security*

Aug. 2021 – Feb. 2022

*Taipei, Taiwan*

- Developed a system that finds similarities between media content to detect plagiarism, provided both web interface and API for the user to interact via **Python, Flask, HTML, MySQL, OpenCV, and Linux (Ubuntu Server)**
- Achieved 95% accuracy by applying ORB algorithm and average hashing for finding altered images
- Implemented audio fingerprinting techniques for music comparison, reached 90% accuracy in identifying modified songs, and utilized multithreading to improve efficiency up to 65%

### Data Analysis Engineering Intern

*Ret[AI]ling Data Enterprise*

Jan. 2021 – Jun. 2021

*Taipei, Taiwan*

- Utilized Random Forest and transaction data in the millions to predict individual customer's growth rate for precision marketing, grouped potentially valuable consumers with up to 74% accuracy via **Python, Pandas, and Scikit-learn**
- Built a customer data platform as an official company product for the retailing industry, contributed reactive visualizations and automated data preprocessing pipelines via **Python, Pandas, and Power BI**

### Office Administrative Intern

*Microsoft Taiwan*

Jul. 2019 – Jun. 2020

*Taipei, Taiwan*

- Assisted law enforcement in requesting digital evidence regarding criminal cases
- Led 30 people as vice general coordinator of the 2020 Microsoft Office Tour, reached 138,890 accounts on Facebook, attracted 1,777 applicants for the event, and had a 4.7/5 satisfaction rate among 450 participants

## PROJECTS

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### SmartFarm – Agriculture Management Platform

Jul. 2019 – Jan. 2021

- Designed a system to monitor farmland data; built real-time IoT data receivers, visualized charts, reactive planting templates, and abnormal data detection via **Python, PHP, JavaScript, Paho, and Highcharts**
- Facilitated overall project progress and communicated specifications with the sponsor company as team leader
- Won 2<sup>nd</sup> place in the 25<sup>th</sup> International ICT Innovative Services Awards, Industry-Academia Cooperation group, a nationwide event with 892 participating teams at the time of attendance
- Served as part of two plans subsidized by the Ministry of Economic Affairs in Taiwan

### League of Legends – Analysis and Prediction ([bit.ly/3ym7pQw](https://bit.ly/3ym7pQw))

Dec. 2020 – Jan. 2021

- Analyzed winning factors and predicted match outcomes using Riot developer API on the game *League of Legends*; developed interactive visuals on results and deployed them to the web via **R and Shiny Apps**
- Voted the best project out of 12 groups in Data Science class

### Personal Website/Blog ([tsai00150.github.io/Tsai-Hsieh-Blog](https://tsai00150.github.io/Tsai-Hsieh-Blog))

Jun. 2022 – Jul. 2022

- Built website with a customized theme via **Jekyll, HTML, and CSS**