

# He-Zhe Lin

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## EDUCATION

M.S. Student, Department of Computer Science and Information Engineering, National Taiwan University, Taiwan, September 2022 – Current.

- Advisor: Chih-Jen Lin
- Taken Course (selected): Information Theory

B.S. (2022), Department of Computer Science and Information Engineering, National Taiwan University, Taiwan.

- Overall GPA: 4.2/4.3; Major GPA (CS-related): 4.24/4.30; Rank: 4/140 (3%)
- Taken Course (selected):
  - CS-related: Machine Learning, Optimization Algorithms, Information Retrieval, Statistical Machine Learning, Cryptography and Network Security.
  - Math-related (undergraduate level): Mathematical Analysis, Abstract Algebra, Probability, Linear Algebra.

## RESEARCH INTERESTS

I focus on problems in machine learning and data science including, but not limited to,

- the training-validation data splitting for multilabel classification problem.
- interpreting existing machine learning algorithms mathematically and extracting the key insight from them.
- studying the implicit bias that optimization algorithm leads, e.g, implicit regularization of gradient descent.

## WORKING EXPERIENCES

Quantitative Research Intern, WorldQuant	August 2022 - March 2023
Teaching Assistant, Optimization Methods for Deep Learning, NTU	Spring 2023
Teaching Assistant, Theory of Computation, NTU	Fall 2022
Teaching Assistant, Calculus, NTU	Summer 2020; Fall 2020; Spring 2020; Fall 2022
Teaching Assistant, Data Structure and Algorithms, NTU	Spring 2020

## PROJECT WORK

Adaptive Undeniability Privacy Preserving Contact Tracing ([report](#); [presentation](#)) Spring 2022

- We studied current solutions to contact tracing and compared their pros and cons. We also proposed a mechanism based on hash function, which strikes a balance between privacy and traceability.

Chinese Song Recommender System ([demo](#)) Spring 2021

- The goal is to recommend suitable songs when readers are reading text.
- We built a TF-IDF model and a neural network model to generate the embeddings of the lyrics and the input, and then chose appropriate metrics to compare their similarities.
- I implemented the TF-IDF vector space model.

A Basic C-- Compiler ([codes](#)) Fall 2020

## SKILLS

C/C++, Python,  $\LaTeX$ , Git, Shell Script, Linux Command Line Interface.

## EXTRACURRICULAR ACTIVITIES

Director, Student Association of Computer Science and Information Engineering August 2020 - July 2021

- Lead 50 students to host academic events and extracurricular activities for hundreds of students in the department.

Lecturer of Basic Python Programming, NTU CSIE Camp July 2020