

# LIANG-YING HUANG

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## EDUCATION

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National Taiwan University (NTU), Taipei, Taiwan

B.B.A in Information Management

Sept. 2016 - June 2020

- **Presidential Awards** (107-2 First Prize)
- **GPA:** 3.65/4.3 (Overall), **3.95/4.3** (CS-related), **4.13/4.3** (Last 60 credits)

## RESEARCH EXPERIENCE

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Research Assistant, advised by **Dr. Lun-Wei Ku**

Aug. 2020 – Dec. 2020

Natural Language Processing and Sentiment Analysis Lab, Academia Sinica, Taipei, Taiwan

- Researched recommendation systems using knowledge graphs.
- Utilized knowledge graphs for recommendation systems based on reinforcement learning. We beat state-of-the-art methods by 5.3 to 10.1 percent.
- Researched hyperbolic embeddings and neural networks for aspect extraction.

Undergraduate Researcher, advised by **Prof. Chien-Chin Chen**

Feb. 2019 - Jan. 2020

Web Exploration and Advanced Learning Lab, National Taiwan University, Taipei, Taiwan

- Applied text analysis skills to news contexts, observed behaviors of users who spread fake news and trained models to detect potential fake news.
- Crawled 2k+ text data and user demographics data for analysis from Executive Yuan Taiwan, Facebook, and PTT (The largest internet forum in Taiwan).
- Built a system that allowed users to query news credibility by news contents and provided users 5 detailed news information for judgement.

## WORK EXPERIENCE

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Web developer, Freelancer

Dec. 2019

- Deployed an RWD website for a printing corporation, including registering a domain, buying and setting up a DNS, renting a virtual server, and handcrafting a website using WordPress.

Intern, CTBC Financial Holding Co, LTD., Taipei, Taiwan

July 2019 - Aug. 2019

- Developed 3 new features in a Customer Service Representative (CSR) system with 100+ users.
- Applied NLP technique to analyze customers' keywords in 10k+ phone calls to seek potential service problems. Visualized keyword trends and found the specific relationship between keywords.
- Designed APIs via Flask to transmit analyzed keywords data with original JAVA-based system.

Web developer, Kaohsiung Port Pilot Union, Kaohsiung, Taiwan

Aug. 2018 - Feb. 2019

*Industry-academia collaboration*

- Implemented backend of a new pilot shift scheduling system for 3x pilots in Kaohsiung Harbor.
- Designed database and RESTful APIs and handled web and mobile user authentications with JWT.

## SELECTED PROJECTS

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Japanese Documents Information Extraction | PyTorch, transformers

June 2020

- Extracted important information from Japanese bidding contracts with an average of 0.97 F1 scores by formulating the problem as a question answering task and utilizing **BERT** and **ALBERT** (transformer-based model) to solve it.
- Analyzed the nature of data and proposed a strategy of pre-training on different dataset structures to enhance performance by 5 percent and reduce convergence time by 12 percent.

- Applied bagging ensemble technique to boost performance by 4 percent.

### Mini Social Media Implementation | Django, Sqlite3

Jan. 2019

- Built a website from scratch with social features such as posting, commenting and liking. Designed the operating logics and frontend views for hosting the website.
- Leveraged the ER diagram to design database schemas with over 10 entities and multiple attributes.

### Functional Reduce And-Inverter Graph | C++

Sept. 2018

- Simplified circuits by detecting structurally equivalent parts and identifying functionally equivalent candidate (FEC) pairs through self-designed data structures based on tree and hash.
- Conducted thorough experiments on performance comparison of different simplifying strategies and improved them to reduce time and space consumption.

## SKILLS

<b>Programming Language</b>	Python, C++, Shell Script, SQL, HTML	<b>Libraries/Tools</b>	PyTorch, Django, Flask
	Native in Mandarin, Fluent in English	<b>Others</b>	Git, LaTeX, Linux

## AWARDS

2019	<b>Honorable Mention</b> , Taiwan InnoServe Awards (out of 100+ final groups)
2019	<b>Semi-final Round Qualification</b> , Data Innovation Competition, Taiwan Industrial Development Bureau (out of 50+ groups)

## RELEVANT COURSEWORKS (\* denotes graduate-level courses.)

<b>Computer Science</b>	Algorithms, Data Structures, Computer Networks, Database Management, Computer Organization & Structure, Operating Systems, Programming Design
<b>Mathematics</b>	Linear Algebra, Calculus, Discrete Mathematics, Statistics
<b>ML/DL</b>	Applied Deep Learning*, Machine Learning Foundation*, Statistical Learning*

## TEACHING EXPERIENCE

2019	<b>Programming Instructor for Python</b> , NTU Information Management Service Education
2018	<b>Lecturer for investing</b> , NTU Information Management Summer Camp
2017-2020	<b>Tutor for high school mathematics</b> , Freelancer

## EXTRACURRICULAR ACTIVITIES

2020	<b>Participant</b> , LINE fresh hackathon
2020	<b>Volunteer</b> , reception of International Students at NTU
2018	<b>Volunteer</b> , open courses video captioning on Coursera (generate English subtitles)
2016	<b>Volunteer</b> , HackNTU (The largest national hackathon on campus with 1000+ participants)