

# Rong-Ching Chang

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## RESEARCH INTEREST

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Machine Learning, Graph Neural Networks, Knowledge Graphs, NLP

## EDUCATION

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**Tunghai University**, Taichung, Taiwan Sep. 2019 - Present  
M.Sc. in Computer Science GPA: 3.76/ 4.30  
Advisor: Prof. Chu-Hsing Lin

**The University of California San Diego**, CA, United States Sep. 2018 - Present  
MicroMasters in Algorithms and Data Structures  
Course: Data Structures Fundamentals, Algorithmic Design and Techniques, Graph Algorithms

**Chung Yuan Christian University**, Taoyuan, Taiwan June 2014 - June 2017  
B.A., in Finance GPA: 3.88 / 4.0  
Advisor: Prof. Yi-Pei Chen  
Academic Excellence Award, Excellent Professional Subjects Award

**Middle Tennessee State University**, TN, United States Sep. 2015 - May 2016  
International Exchange Program GPA: 3.63 / 4.0

## CONFERENCE PAPERS

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[Online Sentiment on Facebook: a Leading Indicator for State-Level Covid-19 Confirm Cases](#)

**Rong-Ching Chang**, Chu-Hsing Lin, Chun-Ming Lai, Kai-Chih Pai  
International Conference On Information Technologies and Practices, 2021

[Detecting Propaganda on the Sentence Level during the COVID-19 Pandemic](#)

**Rong-Ching Chang**, Chu-Hsing Lin  
Cryptography and Information Security Conference (CISC), 2020.

[Pandemic Response and Crisis Informatics: An Imperative for Public Health Messaging](#)  
Chun-Ming Lai, Yi-Chen Liu, **Rong-Ching Chang**, Jon W. Chapman and Chu-Hsing Lin  
International Computer Symposium (ICS), 2020.

[Leveraging Top Participants Networks Topology to Identify Suspiciously Manipulated Posts](#)  
Chun-Ming Lai, Huan-Chieh Tseng, **Rong-Ching Chang**, Tzer-Shyong Chen, Kai-Chih Pai  
National Conference on Science and Technology of National Defense. 2020.

[An Attribute-based Encryption for Cloud Medical Data Sharing and Its Implementation](#)  
Chu-Hsing Lin, Chu-I Wu, Chia-Yuan Cheng, **Rong-Ching Chang**  
The Symposium on Digital Life Technologies 2020 (DLT 2020).

## Unconnected searchable encryption and implementation for cloud medical record services

適合於雲端病歷服務的無連結性可搜尋加密與實作

Chu-Hsing Lin, Yuan-Xiang Chi, Xuan-Jie Wang, **Rong-Ching Chang**

The Symposium on Digital Life Technologies 2020 (DLT 2020).

## **TALKS**

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Is a Twitter user's location correlated with their opinion on #COVID-19?

**Rong-Ching Chang**, Chun-Ming Lai

PyData Taipei. 2020.

## **RESEARCH EXPERIENCE**

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### **Information Security Lab, Tunghai University**

#### **Suspicious Account Operation and Applied Tactics in National Events on Social Media**

Advisors: Prof. Chu-Hsing Lin, Chun-Ming Lai

Nov. 2020 – Dec. 2020

- Writing research proposal and designing research pipeline

#### **Cross-Platform Disinformation Diffusion Tracing to Source**

Advisors: Prof. Chun-Ming Lai, Chu-Hsing Lin

Nov. 2020 - Present

- Tracing the origin of the disinformation in a cross-platform setup using different ML models

#### **Propaganda Techniques and Targeting Strategies on Different Geographic Areas**

Advisors: Prof. Chun-Ming Lai, Chu-Hsing Lin

Nov. 2020 - Present

- Conducting research that will lead to several applications and publications

#### **AI + HI smart critical care diagnosis and treatment system and a new model of inter-hospital practice**

Advisor: Prof. Chun-Ming Lai

Dec. 2020 - Present

Funder: The Ministry of Science and Technology, Taiwan

NO: MOST 109-2321-B-075A-001

- Assisting with several research publications related to this topic
- Constructed database, data pre-processing, and machine learning pipeline
- Researching using MIMIC-III database

#### **Defense Methods against Co-Resident Attack of Cloud Security and Proprietary Mechanisms in Medical Applications**

Advisor: Prof. Chu-Hsing Lin

Sep. 2019 - Present

Funder: The Ministry of Science and Technology, Taiwan

NO: MOST107-2221-E-029-005-MY3.

- Assisting with several research publications related to this topic

#### **Smart Plant: Giving a plant what it needs**

Advisors: Prof. Chao-Tung Yang

Nov. 2020 – Jan. 2021

#### **Propaganda Detection during COVID-19**

Advisor: Prof. Chu-Hsing Lin

May. 2020 – Aug. 2020

- Used BERT on transfer learning task in fast and first level propaganda detection
- The result showed notable differences both in account behavior and their texted content.

### **Leveraging Participant Network Topology to Identify Suspiciously Manipulated Posts**

Advisor: Prof. S. Felix Wu, Chun-Ming Lai, Kai-Chih Pai

Sep. 2019 – Sep. 2020

- Identifying suspicious accounts and posts using domain, first N participants

### **Chung Yuan Christian University**

#### **The Effects of Family-Owned Business and the Initial Public Offerings System on Market Liquidity**

Advisor: Prof. Yi-Pei Chen

July 2015 - Feb 2016

Funder: The Ministry of Science and Technology, Taiwan

NO: 104CFD0500082

- Our models showed IPO pricing has a positive effect on market liquidity in new IPO system.

### **PROFESSIONAL EXPERIENCE**

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#### **Industrial Technology Research Institute**

Hsinchu, Taiwan

AI Research Intern, Computational Intelligence Technology

Jan. 2020 – Aug. 2020

- Researched and tested papers focused on AutoML frameworks, automatic forecasting of time series, global supply chain management, inventory management
- Tested AutoML packages including AutoKeras, Hyperas with docker, GPU, Tensorflow and Pytorch on various tasks.

#### **Factor Bike**

Taichung, Taiwan

Full Stack Web Developer Intern

Jan. 2019 – Apr. 2019

- Developed Shopify online store

#### **J.P. Instruments**

CA, United States

UX/UI Intern

July 2017 – Dec. 2017

- Developed app design

#### **Doctor Diet Inc.**

Nashville, TN, United States

Automated Accounting Intern

May 2016 – Sep. 2016

- Developed semi-automated system for daily sales statements, cash flow tracking for 14 clinics

### **Certificate**

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- Microsoft Certified: Azure AI Fundamentals
- Nvidia: Combining Data Types through an Image Captioning Project

### **HONORS & AWARDS**

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- National Planning College Student Innovation Contest Finalist Award, Taiwan Business Strategy Association
- Times Young Creative Finalist Award (top 1% from thousands of competitors from China and Taiwan)

## LEADERSHIP EXPERIENCE

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**President**, Photography Club, Chung Yuan Christian University, Taoyuan, Taiwan

May 2014 – May 2015

Doubled membership to 200; Recognized with award for Excellent Art Club; best achievement since club establishment.

## SKILLS

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- Computer

SQL, Git, Docker, RestAPI, HTML, R, C, Java, Bash, Hadoop, Spark, AWS, Arduino, Jupyter  
Python: sklearn, fast.ai, Pandas, TensorFlow, Keras, Pytorch, DGL, Hugging Face, Networkx

- Language

English, Mandarin

## PROFESSIONAL DEVELOPMENTS

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Python for Financial Analysis and Algorithmic Trading, Intro to Fintech, Knowledge Graphs,  
Probabilistic Graphical Models: Representation, Graph Algorithms in Genome Sequencing,  
Dynamic Programming: Applications in Machine Learning and Genomics, NP-Complete  
Problems, String Processing and Pattern Matching Algorithms