

# Rong-Ching Chang

[rocchang@ucdavis.edu](mailto:rocchang@ucdavis.edu) | +1(430)-280-0881

<https://annabechang.github.io> | <https://github.com/annabechang>

<https://www.linkedin.com/in/rong-ching-chang>

## RESEARCH INTEREST

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Graph Neural Networks, Knowledge Graphs, NLP, Social Media Data mining,  
Multimodal Data Fusion

## EDUCATION

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**University of California, Davis** Sep. 2021 - Present  
Ph.D. in Computer Science  
Advisor: Prof. Zubair Shafiq, Magdalena Wojcieszak

**Tunghai University**, Taichung, Taiwan Sep. 2019 – June 2021  
M.Sc. in Computer Science GPA: 3.98/ 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

## JOURNAL PAPERS

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[Entropy-Based Time Window Features Extraction for Machine Learning to Predict Acute Kidney Injury in ICU](#)

Chun-Te Huang, **Rong-Ching Chang**, Yi-Lu Tsai, Kai-Chih Pai, Tsai-Jung Wang, Chia-Tien Hsu, Cheng-Hsu Chen, Chien-Chung Huang, Min-Shian Wang, Lun-Chi Chen, Ruey-Kai Sheu, Chieh-Liang Wu, Chun-Ming Lai  
Applied Sciences. 2021; 11(14):6364. <https://doi.org/10.3390/app11146364>

## CONFERENCE PAPERS

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[Dataset of Propaganda Techniques of the State-Sponsored Information Operation of the People's Republic of China](#)

**Rong-Ching Chang**, Chun-Ming Lai, Kai-Lai Chang, Chu-Hsing Lin  
Misinformation and Misbehavior Mining on the Web with International Conference on Knowledge Discovery & Data Mining (KDD) 2021

[Online Sentiment And Post Reactions On Facebook: Leading Indicator For State-Level Covid-19 Confirmed Cases](#)

**Rong-Ching Chang**, Chun-Ming Lai, Chu-Hsing Lin, Kai-Chih Pai

AI for Public Health workshop at the International Conference on Learning Representations (ICLR), 2021

[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).

## **WORKING PAPERS**

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Metrics and Analysis of Polarization and Echo Chamber on YouTube Videos

Understanding User Ideology Exposure Shifts and Causal Relationships on YouTube Video and News

## **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

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

Advisor: Prof. Chun-Ming Lai

Dec. 2020 - June 2021

Funder: The Ministry of Science and Technology, Taiwan

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

- Conducting research publications

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

Advisor: Prof. Chu-Hsing Lin

Sep. 2019 - June 2021

Funder: The Ministry of Science and Technology, Taiwan

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

- Assisting with several research publications

#### 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
- The proposal was granted from The Ministry of Science and Technology, Taiwan, with project number of MOST 110-2221-E-029-012

#### Smart Aquatic Plant: Giving the aquatic plant what it needs

Advisors: Prof. Chao-Tung Yang

Nov. 2020 – Jan. 2021

- Designing and making aquatic plant monitoring system using Arduino

### 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

Finance Manager Intern

May 2016 – Sep. 2016

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

## REVIEWER FOR JOURNALS & CONFERENCES

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- Scientific Report, Nature

## 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 an award for Excellent Art Club; best achievement since club establishment.

## SKILLS

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- Computer  
SQL, Git, Docker, REST API, HTML, R, C, Java, Bash, 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