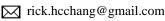
Hung-Ching Chang





Hung-Ching-Chang





Hung-Ching (Rick) Chang

Education

University of Pittsburgh (UPitt)

PA, US Aug 2021 - present

Ph.D. in Biostatistics

Advisor: George C. Tseng & Kayhan Batmanghelich

Taipei, Taiwan

National Taiwan University (NTU)

Sep 2017 - Jun 2019

M.S. in Biostatistics Thesis: Development of a knowledge-based and data-driven network construction method for gene sets. *Advisor*: Chuhsing Kate Hsiao

National Cheng Kung University (NCKU)

Tainan, Taiwan Sep 2013 - Jun 2017

B.S. in Mathematics / **B.B.A.** in Statistics

Graduate courses: Numerical Analysis, Stochastic Processes, Molecular Biology

Publications

- 1. Chang, H., Chu, C., Lin, S. et al. Network hub-node prioritization of gene regulation with intranetwork association. BMC Bioinformatics 21, 101 (2020).
- 2. Chang, Y., Tung, Y., Lee, K., Chen, T., Hsiao, Y., Chang, H. et al. Potential Therapeutic Agents for COVID-19 Based on the Analysis of Protease and RNA Polymerase Docking. Preprints (2020).
- 3. Chang, H., Hsiao, C. Development of a knowledge-based and data-driven network construction method for gene sets. Master's thesis.

Research Experience

Statistician / Data Scientist

Taiwan AI Labs

Taipei, Taiwan Jan 2020 – Jun2021

- Consult with customers/colleagues to explain and implement statistical models
- Design tools for predicting genetic networks with survival analysis
- Build model for antibiotic resistance prediction using deep learning and machine learning techniques, such as Bayesian neural network
- Integrate 3rd party tools into our platform, Taigenomics
- Build automated genome-wide association study (GWAS) pipeline including preimpute QC, phasing, imputation and analysis
- Establish the virus transmission tool for COVID-19

Research Assistant

NTU

Advisor: Prof. Chuhsing Kate Hsiao

Taipei, Taiwan Sep 2017 - Jun 2019

- Developed topology-based and network-based methods for pathway/gene set analysis and applied them to breast and ovarian cancer studies
- Focused on gene expression profile and pathway databases, such as KEGG database
- Presented at Research Poster Exhibition 2019, NTU

Guest Scientist in "Mathematics in Life Sciences"

Freie Universität Berlin Berlin, Germany

Advisor: Prof. Alexander Bockmayr

• Research project: Gene regulation in regulatory flux balance analysis (rFBA)

· Recovered the Boolean rules that regulate metabolism from the metabolic network

Jul 2018 - Aug 2018

International Genetically Engineered Machine Competition (iGEM)

NCKU Tainan team --- Official team page

NCKU Tainan, Taiwan Jul 2016 - Sep 2017

Advisor: Prof. I-Son Ng

- Simulated the diffusion of urine via finite differencing explicit method
- Build a statistical model to classify normal and pre-diabetes parameters
- Completed the project in collaboration with students from six different colleges
- Acquired knowledge in Molecular Biology and Synthetic Biology

Conference

11th International Conference on Multiple Comparison Procedures

- Oral Presentation (invited)

Taipei, Taiwan Dec 2019

4th iGEM Asia-Pacific Conference

Tainan, Taiwan Aug 2016

Organizer & Poster Presentation

Honor & Awards

Research Poster Exhibition 2019

Taipei, Taiwan May 2019

Outstanding Poster Presentation Award 2 recipients/year in Biostatistics

Germany – Taiwan Academic Exchange Scholarship

Germany & Taiwan

Jul 2018

Offered by the German Academic Exchange Service (DAAD)

• 10 recipients/year in Taiwan

International Genetically Engineered Machine Competition (iGEM)

MA, USA

Oct 2016

• Gold Medal & the Best Presentation

Nominated for the Best Diagnostics Project

Achievement of Excellence Study Grant

· Offered by Prof. Kwok-Kun Kwong of NCKU

Tainan, Taiwan

Basic Statistics Competition

Distinguished Honor Award

• Top 3% in over 500 competitors

Tainan, Taiwan

Leadership

Student Association of the Mathematics Department

NCKU

President

Jul 2014 - Jun 2015

United Student Associations

NCKU

Executive Director in college of science

Jul 2014 - Jun 2015

Workshop Experience

- Taipei Summer Institute in Statistical Genetics (SISG). Taipei, Taiwan. (2017)
- Workshop on Experimental Design and Uncertainty Quantification. NCKU, Taiwan. (2016)
- Statistical Science Camp. Academia Sinica, Taiwan. (2016)
- Mathematical Modeling (Summer course). NCKU, Taiwan. (2016)
- Taiwan Mathematical Society Annual Meeting, NCKU, Taiwan. (2014)

License

Big Data Analyst – Associate Level

Taiwan

Certified by the Ministry of Economic Affairs, R.O.C.

2017

Language & Programming Skill

Language Native Mandarin, Taiwanese | Proficient English | Basic German & Spanish

Programming Proficient R, Python, Matlab, Linux, shell, git

Data analysis Statistics, Machine learning frameworks/algorithms, Bioinformatics tools