

# Yu-Yuan (Stuart) Yang

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## Education

**National Taiwan University, Taipei, Taiwan** (Sep. 2021 – Feb. 2023, expected)  
Biomedical Electronics and Bioinformatics, MS (4.11 out of 4.3, expected)

**National Taiwan University, Taipei, Taiwan** (Sep. 2016 – Jun. 2021)  
Agricultural Chemistry B.Sc., Chemical Engineering B.E., double degree (4.04 out of 4.3, rank 1/58)  
Additional Specialized Program: Molecular Medical Sciences Program

## Work/Laboratory Experience

**National Taiwan University, Taipei, Taiwan**

Graduate Institute of Biomedical Electronics and Bioinformatics

*Master student (full-time; Sep. 2021 to date), Supervisor: Yufeng Jane Tseng*

- **Health informatics (collaborator: Ming-Che Kuo M.D.)**
  - Collected the gait/hand videos, voices, and drawings from patients with Parkinsonism symptoms.
  - Established scoring system with machine learning and deep learning.
- **Structural computational biology**
  - Integrated open-source health data to specify the SARS-CoV-2 variant shifts.
  - Identified related sites for the high transmissibility of newly-emerging variants by molecular dynamic and structural analysis methods in Linux-based environment.
- **Cheminformatics**
  - Built a dashboard for chemical compounds with integrated data from multiple sources.
  - Developed QSAR models to predict the toxicity of chemical compounds.
- **Quantum informatics**
  - Implemented quantum machine learning in a real-world carcinogenic QSAR problem.

Department of Chemical Engineering

*Senior Researcher (part-time; Jul. 2020 – Jun. 2021), Supervisor: Steven Sheng-Shih Wang*

- Developed whey-protein-isolate-incubated amyloid fibrils as a novel functional material for anti-oxidation encapsulation of limonene-resolved  $\beta$ -carotene

Department of Agricultural Chemistry

*Project Researcher (part-time; Sep.– Dec. 2019), Supervisors: Nai-Chun Lin and Hui-Min Chung*

- Isolated a novel phage of *Streptomyces griseus* from the soil for the SEA-PHAGE project.

**National Health Research Institute, Miaoli County, Taiwan**

Institute of Molecular and Genomic Medicine, DIGI+Talent Accelerator & Jumpstart Program

*Bioinformatics Intern (part-time; Jul. – Dec. 2020), Supervisors: Shih-Feng Tsai and Chun-Chi Lai*

- Analyzed whole genome sequence data for a genomic-driven rare disease case independently.
- Developed an automated WGS reporting system (for cancer) with an interactive bash script.  
(source codes: [https://github.com/yuyuan871111/NHRI\\_group4](https://github.com/yuyuan871111/NHRI_group4))

**National YangMing Chiao Tung University, Taipei, Taiwan**

Institute of Biomedical Informatics

*Undergraduate Summer Intern (full-time; Jul. – Aug. 2018), Supervisor: Ueng-Cheng Yang*

- Established an online dashboard based on Bergey's manual, R shiny, and python for microbial research.  
(dashboard: <http://120.126.47.90/MOF>)

## Honour

- **NTU-IBM Quantum Hub – Qiskit Hackathon Taiwan 2022** (Jul. 2022), *Enterprise Special Prize from 12 teams (60 participants), Presenter (Introduction)*.
- **DIGI+Talent Global Digital Awards**, Industrial Development Bureau, Ministry of Economic Affairs, Taiwan (Dec. 2020), *Third place from 40 teams (360 participants)*.
- **Undergraduate research fellowship**, National Science and Technology Council, Taiwan (Jul. 2020 – Feb. 2021).
- **Presidential Award**, National Taiwan University (2016 fall, 2017 fall).

## Publication/Conference Experience

- **Recent advances in quantum computing for drug discovery and development** (submitted in Aug. 2022, under review), *Third Author*.
- **The evolution of SARS-CoV-2 Omicron Variants on the spike-protein and hACE2 interface – determined by the hydrogen bonding formations** (submitted in Jul. 2022, in revision), *First Author*.
- **QSAR model of carcinogenicity based on data from GreenScreen hazard assessment** (Aug. 2022), ACS Fall 2022, Poster – Virtual, *Second Author*.
- **Current trends in safer alternatives and risk assessment** (Aug. 2022), ACS Fall 2022, Poster – Virtual, *Second Author*.
- **Benchmark dataset for hazardous substances for safer alternative chemicals** (Aug. 2022), ACS Fall 2022, Poster – Virtual, *Fourth Author*.
- **Competitive analysis of different SARS-CoV-2 variants in United Kingdom, Israel, South Africa, Brazil and Peru** (Mar. 2022), ACS Spring 2022, Oral – Virtual, *First Author and Presenter*.

## Teaching Experience

### National Taiwan University, Taipei, Taiwan

*Teaching Assistant for Calculus (part-time; Oct. 2021 – Jan. 2022, Mar. – Jun. 2022)*

- Graded assignments, answered students' questions in calculus, and bridged the communication between professors and students.

## Language

- **The Graduate Record Examination® General Test** 314/340 (Mar. 2021), Educational Testing Service®.
- **Freie Universität Berlin, Berlin, Germany** (Jul. – Aug. 2017), Overseas Summer Program: A1–German Language Beginner 1.

## Volunteer Experience/Extracurricular Activities

### Investigator Taiwan

*Writer (Jan. 2022 to date)*

- Wrote two scientific articles to introduce the latest scientific studies.

### Children of the Sea Club, National Taiwan University

*Executive Secretary (Sep. 2019 – Feb. 2020), Club member (Sep. 2017 – Feb. 2018)*

- Assisted in holding a winter camp for students on an islet off the coast of Taiwan.
- Proposed and implemented two lesson plans on the camp for junior high school students.
- Interacted with 30 habitants and deeply interviewed five residents.