

Yu-Yuan (Stuart) Yang

(Nationality: Taiwan)

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Professional Summary

Highly motivated and interdisciplinary researcher with 4+ years' experience in agro-chemistry, biomedical engineering, and computer science, strongly supported by educational training and additional researches in microbiology and informatics. Also, proficient in all Microsoft Office, Python3 (numpy, pandas, pytorch), MATLAB and R, shell scripting, conda, and git/github.

Education

Queen Mary University of London, London, United Kingdom (*Sep. 2023 - present*)

Artificial Intelligence for Drug Discovery (AIDD) PhD Programme

National Taiwan University, Taipei, Taiwan (*Sep. 2016 – Apr. 2023*)

Biomedical Electronics and Bioinformatics, M.Sc.

Agricultural Chemistry B.Sc., Chemical Engineering B.E., double degree

Molecular Medical Sciences Program, additional specialized program

grade: 4.11 out of 4.3

grade: 4.04 out of 4.3, rank: 1/58

Work/Laboratory Experience

National Taiwan University, Taipei, Taiwan

Graduate Institute of Biomedical Electronics and Bioinformatics

Supervisor: Yufeng Jane Tseng

Master student (full-time; Sep. 2021 to date)

- **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 quantitative structure-activity relationship (QSAR) models to predict toxicity of chemicals.

- **Quantum informatics:** implemented quantum machine learning in a real-world carcinogenic QSAR problem.

Department of Chemical Engineering

Supervisor: Steven Sheng-Shih Wang

Senior Researcher (part-time; Jul. 2020 – Jun. 2021)

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

Department of Agricultural Chemistry

Supervisors: Nai-Chun Lin and Hui-Min Chung

Project Researcher (part-time; Sep. – Dec. 2019)

- 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

Supervisors: Shih-Feng Tsai and Chun-Chi Lai

Bioinformatics Intern (part-time; Jul. – Dec. 2020) in DIGI+Talent Accelerator & Jumpstart Program

- 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)

National YangMing Chiao Tung University, Taipei, Taiwan

Institute of Biomedical Informatics

Supervisor: Ueng-Cheng Yang

Undergraduate Summer Intern (full-time; Jul. – Aug. 2018) (dashboard: <http://120.126.47.90/MOF>)

- Established an online dashboard based on Bergey's manual, R shiny, and python for microbial research.

Honours

- [1] **UKRI/BBSRC AIDD PhD Programme Scholarship** (*Sep. 2023 – Sep. 2027*).
- [2] **NTU-IBM Quantum Hub – Qiskit Hackathon Taiwan 2022** (*Jul. 2022*). Enterprise Special Prize from 12 teams (60 participants). My contr.: presented the intro about our quantum solutions on the traveling sales problem.
- [3] **DIGI+Talent Global Digital Awards**, Industrial Development Bureau, Ministry of Economic Affairs, Taiwan (*Dec. 2020*). Third place from 40 teams (360 participants). My contr.: core team member on codings.
- [4] **Undergraduate Research Fellowship**, National Science and Technology Council, Taiwan (*Jul. 2020 – Feb. 2021*). My contr.: write a research proposal independently and apply for fundings to support my research.
- [5] **Presidential Award**, National Taiwan University (*2016 fall, 2017 fall*).

Publication/Conference Experience

- [1] **Yang, Y. Y.** (*April 2023*). “FastEval Parkinsonism : an instant deep learning-based online self-evaluation system for the diagnosis of Parkinson's symptoms with hand videos using finger tapping.” Master thesis.
- [2] **Yang, Y. Y.** and Tseng, Y. J. (*May 2023*). “The evolution of SARS-CoV-2 Omicron Variants on the spike-protein and hACE2 interface – determined by the hydrogen bonding formations.” *Briefings in Functional Genomics*, DOI: 10.1093/bfpg/elac053, protocol article.
- [3] Wang, P. H., Chen J. H., **Yang, Y. Y.**, Lee, C., and Tseng, Y. J. (*Apr. 2023*). “Recent advances in quantum computing for drug discovery and development.” *IEEE Nanotechnology Magazine*, DOI: 10.1109/MNANO.2023.3249499, review article.
- [4] Wang, P. H. , **Yang, Y. Y.**, and Tseng, Y. J. (*Aug. 2022*). “QSAR model of carcinogenicity based on data from GreenScreen hazard assessment.” *American Chemical Society Fall 2022*, poster – virtual.
- [5] Wang, Y. K., **Yang, Y. Y.**, Chang, C. Y., and Tseng, Y. J. (*Aug. 2022*). “Current trends in safer alternatives and risk assessment.” *American Chemical Society Fall 2022*, poster – virtual.
- [6] Kuo, T. C., Wang, P. H., Wang, Y. K., **Yang, Y. Y.**, Yao, P. Y., Jhong Y. C., Chang, C. Y., Lee, C. Y. and Tseng, Y. J. (*Aug. 2022*). “Benchmark dataset for hazardous substances for safer alternative chemicals.” *American Chemical Society Fall 2022*, poster – virtual.
- [7] **Yang, Y. Y.** and Tseng, Y. J. (*Mar. 2022*). “Competitive analysis of different SARS-CoV-2 variants in United Kingdom, Israel, South Africa, Brazil and Peru.” *American Chemical Society Spring 2022*, oral – virtual, 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

- **ILETS** overall: 6.5 (L: 6.5, R: 7.0, W: 6.5, S: 6.0) (*Jan. 2023*).
- **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

- **Natioanl Taiwan Univeristy, Taipei, Taiwan.** *International Student Volunteer (Feb. – Jun. 2022, Sep. 2022 – Jan. 2023)* Assisted 3 international students in enrollment in the university, provided vital information on accommodation, transportation, and online course selection.
- **Project Tyra.** *Member and Crew (Jan. 2023 to date)* Organized documents and verified membership.
- **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.