

# HUANG, Po-Wei (George)

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## EDUCATION

### National University of Singapore

Aug 2020 – Present

*BComp in Computer Science With Second Major in Mathematics [CAP 4.85/5.00]*

- Focus Area: Algorithm and Theory / Artificial Intelligence
- Dean's List (Cohort Top 5%): Fall 2020, Spring 2021
- Coursework: Design and Analysis of Algorithms (A+), Artificial Intelligence (A), Machine Learning(A-), Database Systems (A), Software Engineering (A), Operating Systems (A), Computer Networks (-), Quantum Computing (-)

### Nanyang Technological University

Aug 2019 – May 2020

*Double Degree in Business and Computing [CAP 4.91/5.00(CS) 4.83/5.00(Business)]*

- Coursework: Computational Thinking (A+), Data Structures(A+), Data Science and Artificial Intelligence (A+)

## WORK EXPERIENCE

### NUS School of Computing

Jan 2021 – Present

*Teaching Assistant (Data Structures and Algorithms Lab)*

- Provided algorithm design consultation and pseudocode finetuning for 100+ students.
- Designed supplementary lab materials for Java programming and data structure applications.

### Taiwan Semiconductor Manufacturing Company, Ltd.

Jul 2021 – Sep 2021

*IT Intern (Equipment Edge Computing Team)*

- Facilitated database transfer from SQL to NoSQL increasing read/write access speed by 10x.
- Created Spring-based backend to existing dashboard to streamline database transfer processes.
- Deployed cluster-balanced Cassandra database for data loss protection and reduced reliance on external data services.
- Adapted Prometheus and Grafana interface for easy monitoring of Kubernetes cluster health status.

### NUS Student for the Exploration and Development of Space

Oct 2020 – May 2021

*Science Group Engineer (Rover Team)*

- Designed and created externally controllalbe drill system for Mars Rover.
- Integrated sensor modules to collect data from Martian soil and perform preliminary analysis.

## RESEARCH

### Neural Logical Structure Recovery in Scholarly Articles

Apr 2021 – Present

*Supervisor: A/P Kan, Min-Yen (NUS Web IR/NLP Group)*

- Optimized logical structure recovery model performance by 9% for Marco-F1 against state-of-the-art benchmark model.
- Built supervised transformer-based transfer learning model for logical structure extraction in scientific articles.
- Adapted sliding attention framework to extract context crossing multiple lines reducing computation cost from  $O(n^2)$  of the full attention model to  $O(n)$ .
- Applied deep semi-supervised learning techniques to increase model robustness and resilience to out-of-domain data.

### Synthesis and Applications of Porous Bio-Carbon Electric Components

Sep 2018 – May 2019

*Supervisor: Professor Lin Hung-Ping (NCKU Department of Chemistry)*

- Researched porous bio-carbon synthesis process to replace traditional graphene processes for carbon electric double-layer capacitors, reducing toxic waste while retaining capacitance.
- Developed Arduino-controlled capacitance measurement system for super-capacitors.

## PROJECTS

### Optimized Logical Structure Extraction Network

- Provided easy-to-access pre-trained deep learning models for logical structure extraction.
- Developed logical structure recovery machine learning pipeline for production usage.

### TSMCTalkTalk Discussion Board (Hosted Sample App)

- Built Django-based discussion forum to simulate technical exchanges for innovations.
- Designed and implemented anonymous discussion thread functionality.
- Designed and implemented thread opening and closing functionality similiar to GitHub issues.
- Utilized Docker technology for rapid deployment to in-house Kubernetes platforms ensuring company data privacy.

### Link.me (Project Repo)

- Built client contact information and meeting schedule management platform with notification features.
- Designed graphic user interface with compatiability for feature expansion.
- Wrote unit tests (JUnit) and maintained developer documentation for all features.

## SKILLS

**Spoken Languages:** Chinese (native), English (professional working proficiency; TOEFL iBT 118/120)

**Programming Languages:** C/C++ (expert), Java (expert), Python (expert), SQL (expert), R(intermediate)

**Software Frameworks:** Cassandra, Docker, Django, Git, Grafana, JavaFX, Kubernetes, Linux/Unix, PostgreSQL, Prometheus, PyTorch, Spring