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]

- Turing Programme (Programme Details)
- 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 Session)

- 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. (TSMC) **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 (NUS SEDS) **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.
- Utillized 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++, Java, Python, SQL
Software Frameworks: Cassandra, Docker, Django, Git, Grafana, JavaFX, Kubernetes, Linux/Unix, PostGreSQL, Prometheus, PyTorch, Spring