Yan-Cheng (Bill) Hsu

Software Security Engineer / Machine Learning Engineer

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EDUCATION

M.S., *Computer Science with Specialization in Artificial Intelligence*, UC San Diego   2021 – 2023

B.S., *Electrical Engineering*, National Central University   2017 – 2020

PUBLICATIONS

- **Hsu, Yan-Cheng;** Li,Y.H.; Chang,C.C.; Harfiya, Latifa N. 2020. "*Generalized Deep Neural Network Model for Cuffless Blood Pressure Estimation with Photoplethysmogram Signal Only.*" *Sensors* 20, no. 19: 5668.
- Latifa N.; **Hsu, Yan-Cheng**; Li, Y.H.; Wang, J.C. 2023. *"On the Optimal Self-Supervised Multi-Fault Detector for Temperature Sensor Data" APSIPA ASC 2023* (Oral Presentation)

PROFESSIONAL EXPERIENCES

Software Development Engineer | **Amazon Artificial General Intelligence Org – Secure A.I. Foundations** | Seattle, WA, U.S. | Oct. 2023 – Present

Olympus Models: Large Language/Visual Models (LLM/LVM) Tooling and Training Optimization on Neurons *[Cyber Security, Artificial General Intelligence (AGI)]*

- Designed and delivered secure SageMaker solutions for AGI scientists, facilitating the **training of LLM/LVMs with 10B+ parameters using over 1TB of data**. Optimized processes with **pre-compilation, caching, and distributed training capabilities**.

Nova Commands & Hoverboard Environment: Sensai Secure AI Platform *[Cyber Security, Artificial General Intelligence (AGI)]*

- Contributed to the understanding, maintenance, and development of **authorization and authentication systems for the ML platform, reinforcing data security** for AGI projects and ensuring the safe handling of large datasets.

Machine Learning Researcher | **UC San Diego Swartz Cental for Computational Neuroscience** | San Diego, CA, U.S. | April. 2023 – Sep. 2023

On the Optimal Self-Supervised Multi-Fault Detector for Temperature Sensor Data *[Time Series Transformers, Unsupervised Learning, Artificial Intelligence (AGI)]*

- Implemented Developed self-supervised time series transformers, securing state-of-the-art performance on diverse temporal datasets.
- **Presented findings orally at the IEEE** *APSIPA ASC 2023* **conference, highlighting innovative approaches in time series analysis.**

PhysioNet 2023 *[EEG, Brain Computer Interface, Artificial Intelligence]*

- Designed and developed a deep learning classifier for predicting CPC scores from EEG data, involving extensive preprocessing, neural network optimization, and creation of a novel feature selection algorithm.

Software Development Engineer Intern | **Amazon Alexa Org** | Seattle, WA, U.S. | Jun. 2022 – Sep. 2022

Sensai Self-Service Onboarding Service *[Cyber Security, Artificial General Intelligence (AGI)]*

- **Created and launched a decoupled web application on AWS Lambda and Cloudfront.** The platform facilitates secure onboarding of apps and APIs for scientists on the Sensai Platform.
- Overhauled Sensai Tenant Directory's onboarding process with automated, secure backend modules for AGI scientists, **featuring multi-layered encryption and stringent security checks**. Slashed app/API integration time by 90%, from 4 hours to 15 minutes, without sacrificing data protection.

Software Research Assistant | **National Central University** | Taoyuan. TW | Dec. 2019 – Sep. 2020

Cuffless Deep-Neural-Network Blood Pressure Predictor by Introducing a New Statistical Feature Selection Algorithm *[Machine Learning Algorithms, Artificial Intelligence]*

- Delivered and designed a model from scratch that incorporated ~6x more data (2.5M+ vital sign records collected from 9000 patients) and achieved ~1.8x more accurate and **state-of-the-art performance by introducing a new statistical algorithm**.
- **Published the work on an international journal** *Sensors: 2020* **as the 1st author.**