HSI-JUI Chang, Rex

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Education

National Yang Ming Chiao Tung University   *Sept 2021 - Present*
Bachelor of Electronics and Electrical Engineering
- Cross-disciplinary studies in innovative entrepreneurialism

Experience

Research Assistant   *Hsinchu City, Taiwan*
Computer-Aided Design for GREAT Systems Laboratory, NYCU   *Oct 2024 - Present*
- Researching integration of Split Federated Learning (SFL) with Low-Rank Adaptation (LoRA)
- Implementing advanced ML system architectures combining federated learning frameworks
- Developing optimization techniques for distributed machine learning systems

Research Assistant   *Hsinchu City, Taiwan*
Intelligent Edge/Fog Computing Alliance Lab, NYCU   *Sept 2023 - Jan 2024*
- Implemented federated learning algorithms with explainable AI techniques
- Developed Gradient Explainer to evaluate federated learning model instances
- Created a technical solution to address Free Rider issues in federated learning systems
- Extended and enhanced research papers for journal submission

Summer Research Intern   *San Diego, USA*
EEG Lab, Swartz Center for Computational Neuroscience, UCSD   *July 2023 - Feb 2024*
- Applied large language models to analyze EEG signals and eye-tracking data from the ZuCo dataset
- Developed statistical methods to evaluate subject performance discrepancies

YEFer (Young Entrepreneur of Future)   *Taipei City, Taiwan*
Epoch School   *Feb 2023 - Jun 2023*
- Participated in a comprehensive entrepreneurship program from ideation to execution
- Collaborated in a team to brainstorm, develop, and refine startup concepts
- Worked with industry mentors to strengthen business proposals
- Designed and proposed an AIoT river water level monitoring solution

Dry Lab Leader   *Hsinchu City, Taiwan*
NYCU_Formosa, iGEM Team   *Oct 2021 - Oct 2022*
- Led the dry lab team, coordinating computational work and biological experiments
- Developed mathematical models for biological experiments using computational tools
- Presented project findings at the 2022 iGEM Jamboree, helping team obtain the gold medal
- Team was nominated for the best biomanufacturing award

Technical Skills

Programming Languages: Python (Pandas, Matplotlib, Seaborn, PyTorch, TensorFlow), C/C++, MATLAB

Tools & Technologies: Git, Edge Computing, Federated Learning, Explainable AI

Software: Microsoft Office Suite, Google Suite, LaTeX

Coursework

AI & Data Science: Machine Learning (Theory & Practice), Data Science with Python, Algorithm Introduction, Edge AI, Deep Learning for FinTech