Tzu-Chieh (Jeremy) Chao

+1-352-219-7301 jeremy880524@gmail.com tzuchiehchao

EDUCATION

University of Florida **Aug. 2024 - May.2026 (Expected)**
Master of Science in Applied Data Science *Gainesville, FL*

- Achievement Award Scholarship
- Research Interest: Mathematical Modeling, Optimization, Machine Learning, Business Analytics

National Taipei University **Sep. 2017 - Jan. 2022**
Bachelor of Business Administration in Business Administration *Taipei, Taiwan*

- Seminar on Managerial Practices Specialized in Operations Management: With an increasing aging population, we analyzed smartphone usage patterns of older adults using Excel and Tableau to determine the best features for their needs. Using the Kano model and IPA analysis, we found that older adults prefer SOS systems, long-lasting batteries, and drop-proof designs.
- Courseworks**:** Linear Algebra, Probability and Statistics, Regression Analysis, Business Analytics

WORK EXPERIENCE

Aventusoft LLC **Aug. 2025 - May 2026 (Expected)**
AI/ML Engineer – UF IPPD Collaboration Gainesville *& Boca Raton, FL*

- Collaborated with Aventusoft engineers to define system requirements, software architecture, and deployment constraints for a clinical-grade ECG AI system.
- Designed cloud and mobile inference pipelines using ONNX Runtime, CoreML, and TFLite, targeting <50 MB model size and <30 s on-device latency.
- Supported FDA Design Control documentation aligned with FDA-oriented medical software development practices.
- Led cross-functional communication with sponsor liaisons to review validation strategy, dataset alignment, and technical deliverables across the project lifecycle.

Commerce Development Research Institution **Feb. 2023 - July 2023**
Research Assistant *Taipei, Taiwan*

- Analyzed sustainability and ESG disclosures from 30 Fortune 500 companies to identify net-zero implementation patterns and business implications relevant to Taiwanese industries.
- Conducted data-driven business and operational impact analysis using structured frameworks (SWOT, PEST, BCG Matrix) to support competitiveness and strategy assessments for SMEs.
- Supported a government-led net-zero transition initiative by performing exploratory data analysis and building visual summaries (Excel, Tableau) to inform business and policy decision-making.
- Collaborated with senior research scientists to translate analytical findings into phased, data-backed recommendations aligned with Taiwan's 2050 net-zero emissions roadmap.

SELECTED PROJECTS

Electrocardiogram Deep Learning **Aug. 2025 – May 2026 (Expected)**
Faculty Coach: Dr. Kejun Huang (CISE) *University of Florida & Aventusoft, LLC*

- Built preprocessing pipelines for single-lead 500 Hz ECG including bandpass filtering, normalization, sliding-window segmentation, and dataset harmonization (LUDB, QTDB, PTB-XL, CPSC).
- Developed a 1D U-Net segmentation model for P/QRS/T delineation using Gaussian soft labels and morphology-aware post-processing; achieved ~1.5–6 ms fiducial timing error.
- Designed and evaluated arrhythmia classification models using a Transformer-based ECG-FM foundation model and a lightweight CNN-BiLSTM classifier for mobile deployment.
- Conducted benchmarking, robustness testing, pruning, and quantization to optimize latency for both cloud (<2 min) and mobile (<30 s) real-time inference pipelines.
- Collaborated with Aventusoft engineers to define system requirements and deployment constraints.

TECHNICAL SKILLS

Programming: Python, C++, C, SQL
Statistical Software: R, SPSS, Excel VBA
Data Visualization: Power BI, Tableau
Frameworks/Tools: PyTorch, TensorFlow
Deployment & System: ONNX Runtime, CoreML, TFLite, FastAPI, Docker
Operating Systems: Unix, Linux, Windows, MacOS