Yi-Shan (Annie) Wu

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Master of Science in Computer Science, Concentration in AI-Track *Expected December 2025*
Cumulative GPA: 4.00/4.00 | **Girls Who Code,** *Community Outreach Committee*

University of Alabama at Birmingham (UAB), Department of Computer Science **Birmingham, AL**
Coursework toward Computer Science Master's degree *January 2023 – June 2024*
Cumulative GPA: 3.70/4.00

Chang Gung University, Department of Medicine **Taoyuan, Taiwan, ROC**
Bachelor of Biomedical Science *August 2013 – June 2017*

TECHNICAL SKILLS

Programming Languages: Python, C, Java, MySQL, Arduino
Library: CUDA, Pytorch, Tensorflow, Scikit-learn, Hugging Face
Machine Learning: Data Mining, Machine Learning, Internet of Things, Microsoft PowerBI, Advanced spreadsheet Modeling
Certifications: Nature Language Processing with Python (Udemy), CUDA Programming Masterclass with C++ (Udemy)

PROFESSIONAL EXPERIENCE

Flow.Inc, *Data Design Specialist* | Taipei, Taiwan (R.O.C) *December 2018 – April 2022*

- Designed and implemented automated data pipelines using **Google Apps Script**, optimizing Google Sheets workflows for usage tracking, email reminders, cell protection, job scheduling, and access permissions, significantly improving operational efficiency and data accuracy.
- Developed and maintained end-to-end **ETL pipelines** with MySQL and AWS S3, integrating platform-stored data and Google sheet data into Power BI for real-time analysis of professional performance metrics across **100+** workers.
- Utilized **Power BI**, **MySQL**, and **AWS S3** to develop advanced **data integration pipelines**, analyze workforce performance, identify bottlenecks, and deliver actionable insights for optimizing resource allocation and retention strategies.
- Proficient in Power BI, MySQL, Google Apps Script, AWS S3, and advanced data engineering and visualization techniques.
- Awarded annual MVP recognition in advancing team goals "VIIPS"(stand for vision alignment, innovation, inspiration, participation and strategic thinking) through impactful business insights and analysis.

RESEARCH EXPERIENCE

Facial Expression Recognition Using IMU Data Collection, *Graduate Research Assistant* | Vestal, NY *August 2024 – Present*

- Developed an advanced wearable health monitoring system to capture and analyze facial expressions leveraging IMU data to Designed a wearable health monitoring system under the mentorship of Professor Yincheng Jin, leveraging IMU data (accelerometer, gyroscope, magnetometer) to classify six primary emotions via Temporal Convolutional Networks (TCNs) and time-series analysis.
- Developed a pipeline for IMU preprocessing (sliding window segmentation, filtering) and feature extraction (statistical and frequency-domain features) to uncover unique motion signatures of emotions.
- Conducted robust evaluations using 5-fold cross-validation and Leave-One-User-Out validation to ensure model generalizability.
- Contributed to a real-time mobile platform for emotion recognition; this project is on track for publication.

PROJECT EXPERIENCE

Fine-Tuning Respiratory Sound to Address Class Imbalance, *Academic Project* | Vestal, NY *August 2024 – Present*

- Integrated an Audio Diffusion Model with **Dynamic Parameters** and **Adaptive Gradient Clipping**, enhancing the speed of diffusion while maintaining audio fidelity.
- Enhanced audio fidelity in the DiffWave model by incorporating a Cosine Scheduler, optimizing the diffusion process, refining learning dynamics, and prioritizing high-quality audio synthesis.
- Expand on the work of "Adversarial fine-tuning using Generated Respiratory Sound to Address Class Imbalance" published in Deep Generative Models for Health Workshop

Noise Augmentation on CUDA, *Academic Project* | Birmingham, AL *August 2023 – November 2023*

- Optimized GPU kernels in C for Gaussian noise augmentation, leveraging CUDA for efficient tiling and channel-wise computation, evaluating speed-up and efficiency across CPU and various kernel algorithms.