Yi Ting Li (Urania)

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Urania
Yi Ting Li

Education

National Cheng Kung University, Tainan, Taiwan *Sep 2017- Jun 2023*
M.D., College of Medicine, School of Medicine Overall GPA: 4.1/4.3
– Relevant Courses: Introuction to Python Programming, Biostatistics

National Yang Ming Chiao Tung University, Hsinchu, Taiwan *Sep 2024-Current*
Credit Program
– Relevant Courses: Calculus III, Discrete Mathematics, Object Oriented Programming and Data Structures, Operating Systems

Research Experiences

•Automated Recognition of Right Ventricular Dilatation and Prognosis Correlation *Sep 2022- Aug 2024*
Student Researcher at National Cheng Kung University Hospital (NCKUH) Advisor: Dr. Mu Hsiang Huang
– Designed and implemented the full study pipeline using TensorFlow Keras for the development of a clinically applicable deep learning model for right ventricular dilatation and assist in long-term prognosis follow-up [**Code**](In Submission)
– Built a real-world dataset from electrical medical records, and used different combination of echocardiographic views to provide information for feature extraction with ResNet3D
– Applied loss function optimizing through F1 score to address the positive sparsity and imbalance problem in medical datasets which has improved the result. AUROC reached up to 0.93 with weighted F1 score up to 0.91 for the base classification model

•Correlation of EKG and Echocardiographic Data in Aortic Regurgitation *Nov 2022- Jun 2024*
Student Researcher at National Taiwan University Hosptial (NTUH) Advisor: Dr. Li Tan Yang
– Collaborated with NTUH and a Japanese research group for the development of a generalizable algorithm in the prediction of left ventricular remodeling parameters with ResNet using Pytorch [**Code**](Paper Accepted)
– Fine-tuned the model with external Japanese EKG dataset to address distribution shifts caused by inter-ethnic differences, and applied SHAP analysis for model explainability

•Large Language Models for Biomedical Applications *Oct 2023- Jun 2024*
Research Intern at Energenesis Biomedical Advisor: Prof. Yun Nung Chen, NTU CSIE
– Leveraged and integrated BioMedLM and the PubMed database to access the latest information with the purpose of prioritizing drug candidates for further experiments
– Proposed methods to explore GPT for drug repurposing by identifying relationships between the mechanisms of FDA-approved drugs and diseases, providing assistance in the hypotheses for drug-disease associations

•Utilizing Deep Learning for Efficient Semiconductor Testing Methodology *Jul 2024- Current*
Research Assistant at National Yang Ming Chiao Tung University, CAD Lab Advisor: Prof. Kai Chiang Wu, NYCU CSIE
– Enahancement of GDBN (good die in bad neighborhood) method in defective die detection using MetaFormer in the view of semantic segmentation, and resulted in a 1.4x performance boost and a 70x speedup (Ongoing research)
– Investigated techniques for post-training quantization and quantization aware training to optimize model size while minimizing performance drop and and accelerate inference, ensuring high industrial relevance and practical efficiency

Publications

(* indicates equal contribution)

– Yi Ting Li*, Kuang-Chien Chiang*, Alexander Te-Wei Shieh, Tetsuji Kitano, Yosuke Nabeshima, Chung-Yen Lee, Kang Liu, Kuan-Yu Lai, Meng-Han Tsai, Li-Ting Ho, Wen-Jone Chen, Masaaki Takeuchi, Tzung Dau Wang, Li-Tan Yang. **Correlating Electrocardiograms with Echocardiographic Parameters in Hemodynamically-Significant Aortic Regurgitation Using Deep Learning**, accepted by *Acta Cardiologica Sinica*, 2024
– Yi Ting Li*, Wei Chen Lin*, Yu De Chen, Ting-An Hsiao, Wen Yao Li, Chih Hsin Hsu, Wei Chuan Tsai, Ping Yen Liu, Mu Hsiang Huang. **Automated Recognition of Right Ventricular Dilatation and Prognosis Correlation**, submitted to *European Heart Journal – Cardiovascular Imaging*

Invention Patent

Mu-Shiang Huang, Wei-Chuan Tsai, Ping-Yen Liu, Yu-De Chen, Wei Chen Lin, Yi Ting Li, Ting-An Hsiao, Wen-Yao Li. **Device And Method For Analyzing Cardiac Ultrasound Images** , I855947, Taiwan

Skills

Languages: Chinese(Native), English(Proficient/TOEFL111), French(Basic)
Developer Tools: Jupyter, VS Code, Git
ML Frameworks: Pytorch, Keras, Tensorflow, Scikit-learn
Programming Languages: Python, C, C++
Database: MySQL