Yuliang(Leo) Chen

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EDUCATION

University of California, San Diego   San Diego, California
M.S. in Data Science   *Sep 2023 – Jun 2025*
GPA: 3.97/4.00

University of California, Santa Barbara   Santa Barbara, California
B.S. in Statistics – Data Science | B.S. in Mathematics   *Sep 2018 – Jun 2022*
GPA: 3.43/4.00

Relevant coursework: Design & Analysis of Algorithm, Distributed Computing, Advanced Machine Learning, Computer Vision, Natural Language Processing, Text Mining, Interpretable ML, Probability Theory, Convex Optimization, Linear Algebra, Abstract Algebra, Mathematical Analysis

SKILLS

Languages: Python, SQL, R, C/C++
Technologies: PyTorch, TensorFlow, Kubernetes, Docker, Ray, Git, Jupyter Notebook, OpenCV, MySQL

PUBLICATION

Anonymous. *Toward Foundation Model for Multivariate Wearable Sensing of Physiological Signals*. Submitted to The Thirteenth International Conference on Learning Representations (ICLR), 2025. *Under review.*

EXPERIENCE

Halıcıoğlu Data Science Institute, UC San Diego   San Diego, California
Graduate Student Researcher   *July 2024 – Present*

- Contributed to the implementation of advanced self-supervised learning algorithms, driving progress in addressing cardiovascular disease research challenges.
- Designed and conducted comprehensive ablation studies, enhancing understanding of model performance.
- Created effective visualizations that facilitated interdisciplinary collaboration, improving comprehension of complex research findings among team members.
- Developed theoretical guarantees for the proposed foundation model, providing a strong foundation for its robustness and applicability in downstream classification tasks.

MOSAIC Lab   San Diego, California
Research Assistant   *Mar 2024 – Present*

- Collaboratively developed a novel foundation model for wearable sensing data that efficiently processes diverse multivariate signals from various physiological sources, enhancing health monitoring and personalized healthcare applications.
- Integrated large language models (LLMs) to perform zero-shot inference, using a fusion mechanism specifically adapted for human sensing data to enhance model efficacy.
- Designed and conducted experiments on a Kubernetes-based cluster, utilizing parallel computing to accelerate model training and optimize resource efficiency.

Micro Ingredients   Montclair, California
Supply Chain Analyst   *Oct 2022 – Sep 2023*

- Led a team of three to implement and deploy a Random Forest model for demand forecasting, achieving 83% accuracy and improving product availability by 27%.
- Collaborated with software engineers to establish a robust database system using Amazon RDS Aurora, utilizing web scraping tools for efficient data collection and storage, thereby facilitating comprehensive data analysis.
- Developed and deployed an interactive Python-based Streamlit dashboard, effectively transforming raw data into actionable insights and supporting strategic decision-making.

PROJECTS

E-StyTR2: Efficient Image Style Transfer with Transformers | *GitHub*

Spring 2024

- Investigated various fusion modules based on StyTr2 to effectively blend style and content, evaluating their efficiency and aesthetic quality using quantitative metrics.

Vivid Panels: Deep Neural Networks for Manga Colorization | *GitHub*

Spring 2024

- Explored fine-tuning pre-trained GAN-based models for manga colorization, highlighting the performance gains achieved by addressing distribution differences between task-specific inputs and pre-training data.

VitT: Vision-Topological Transformer for Medical Image Classification | *GitHub*

Spring 2024

- Introduced the VitT model, strengthening Vision Transformer (ViT) with lightweight task-specific encoder and fusion layer, resulting in better performance with minimal computational cost.

Foundation Model On Retinal Images using Masked Autoencoders | *GitHub*

Fall 2023, Winter 2024

- Developed foundation model for fundus image analysis using Masked Autoencoders (MAE) under the supervision of Professor Pengtao Xie.

Image-to-Image Retrieval with CLIP | *GitHub*

Winter 2024

- Developed an image-to-image retrieval system using CLIP, demonstrating its superior ability to capture robust and generalized image representations compared to traditional CNNs like ResNet.