Wanting Mao

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EDUCATION

- **University of Illinois Urbana–Champaign** *Aug 2024 – May 2029 (Expected)*
  Ph.D. in Computer Science; Advisor: Prof. James M. Rehg Urbana, IL

- **University of California, San Diego** *Sep 2020 – Jun 2024*
  B.S. in Data Science; B.S. in Mathematics (Applied) La Jolla, CA
  - Overall GPA: 3.955 / 4.00; Magna Cum Laude (top 6%)
  - Marshall College Honors; Provost Honors (2021-2024)

SKILLS

Machine Learning: Time-Series, Self-Supervised Learning, Contrastive Learning, Biosensors, Health
Programming: PyTorch, Pandas, Tensorflow, SQL, R

PUBLICATIONS

Wanting Mao[†], Maxwell A. Xu[†], Harish Haresamudram, Mithun Saha, Santosh Kumar, James M. Rehg. *Leveraging Shared Prototypes for a Multimodal Pulse Motion Foundation Model.* Manuscript submitted for review in *International Conference on Learning Representations (ICLR 2026).* DOI: https://doi.org/10.48550/arXiv.2510.09764 ([†]Co-first authors.)

Mithun Saha[†], Maxwell A. Xu[†], **Wanting Mao**, Sameer Neupane, James M. Rehg, Santosh Kumar. *Pulse-PPG: An Open-Source Field-Trained PPG Foundation Model for Wearable Applications Across Lab and Field Settings.* In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT / UbiComp 2025).* DOI: https://doi.org/10.1145/3749494 ([†]Co-first authors.)

SELECTED EXPERIENCES

- **Rehg Lab** *Aug 2024 – Present*
  PhD Student
  - Research interests include developing self-supervised learning frameworks for time-series foundation models.
  - Projects include a prototype-based multimodal learning method, and an open-source PPG foundation model for wearable field data.
  - Primary organizer of the NeurIPS 2025 Time-Series for Health (TS4H) workshop.

ACADEMIC SERVICE & LEADERSHIP EXPERIENCE

- **Organizer, NeurIPS 2025 Time-Series for Health (TS4H) workshop** [⊕]
  - Involved in all stages of organizing the TS4H Workshop, from proposal drafting and sponsorship logistics to review coordination, website maintenance, and on-site execution.

SELECTED PROJECTS

- **Implementation of Distribution Testing Algorithms** *Sep 2021 – Jun 2024*
  Early Research Scholars Program (ERSP) at UC San Diego Advisor: Prof. Daniel M. Kane
  - Implemented eight distribution testing algorithms that can process over 10,000 samples per second.
  - Conducted experiments validating theoretical bounds on sample and threshold constants.
  - Presented at the 2022 Undergraduate Research Symposium and ERSP National Conference.
  - Contributed to the paper *"Experimental Evaluations of Distribution Testing Algorithms."*

- **Diffusion Models for Image and Data Generation** *Sep 2023 – Jun 2024*
  Captone Project at UC San Diego Advisors: Prof. Alex Cloninger, Prof. Rayan Saab
  - Investigated the numerical stability of diffusion models under multiple data distributions.
  - Proposed a system ensuring accurate object counts during image generation via improved forward–reverse consistency.

- **The Impact of Security-Related Chatbots on Users' Mental Models** *Jun 2022 – Jun 2023*
  ERSP Summer Program at UC San Diego Advisor: Prof. Imani N. S. Munyaka
  - Developed a security-focused recommendation chatbot integrating SAUR conversational framework and custom UI design.
  - Presented results at the UCSD Summer Research Conference (SRC).

- **ECG Processing and Classification** *Mar 2023 – May 2023*
  CSNext Workshop at University of Washington Reality Lab
  - Processed ECG data with ML models (Adaboost Decision Trees, 1D-CNN) to detect cardiac anomalies.
  - Demonstrated application for wearable devices detecting arrhythmia via smart sensors.

- **"Spam"-Related Twitter Analysis** *Jun 2022 – Aug 2022*
  ERSP Summer Program at UC San Diego Advisor: Prof. Imani N. S. Munyaka
  ◦ Analyzed over 10,000 tweets to study public opinions via topic modeling and sentiment analysis.
  ◦ Mentored high-school students in preprocessing, debugging, and data analysis.

TEACHING EXPERIENCE

- **MATH 102 Linear Algebra, Reader** *Mar 2024 – Jun 2024*
  UC San Diego
- **MATH 154 Discrete Mathematics and Graph Theory, Reader** *Jan 2024 – Mar 2024*
  UC San Diego
- **Youth Pioneers in STEM (YPStem), Volunteer Tutor** *Jun 2022 – Jun 2024*
  Online
  ◦ Provided free online tutoring for underrepresented high school students on STEM topics.

- **San Diego Honors Math Contest 2023, Grader and Proctor** *Apr 2023*
  UC San Diego
  ◦ Selected as one of the undergraduate graders for the annual UCSD math contest.
  ◦ Supervised exam sessions, assisted candidates, and graded essay-style proof questions.

- **Student Tutor for K–12 Students** *Sep 2020 – Jan 2021*
  Beijing, China
  ◦ Graded assignments, quizzes, and exams, and guided students through problem-solving strategies.
  ◦ Supported student learning engagement and communicated progress with teachers and parents.