Shuo WEN

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Education & Training

PhD in Computer Science, École Polytechnique Fédérale de Lausanne (EPFL) Jan 2023 to Present
Lab: Machine Learning for Biomedicine Laboratory
Advisor: Prof. Maria Brbić

MSc in Computer Science, École Polytechnique Fédérale de Lausanne (EPFL) Sep 2019 to Aug 2022
CGPA: 5.57/6
Advisor: Prof. Martin Vetterli, Prof. Gerard Pons-Moll, Prof. Pascal Fua

BE in Electronic Engineering, Shanghai Jiao Tong University Sep 2015 to Jun 2019
CGPA: 87.53/100
Advisor: Prof. Bingbing Ni

Student Researcher (Master Thesis), Max Planck Institute for Informatics Jul 2021 to Dec 2022
Lab: Real Virtual Humans Lab
Advisor: Prof. Gerard Pons-Moll, Prof. Pascal Fua, Julian Chibane

Research Interest

I thrive on developing foundation models for domains that currently lack them, such as biology, with a particular emphasis on multimodal and cross-modal settings. For existing foundation models, I am interested in how to leverage them more effectively and how to build principled connections between them:

- Designing foundation models for biological and biomedical data, from molecules to cells and tissues.
- Building cross-modal and multimodal models by aligning, composing, or jointly training existing foundation models.
- Developing methods to better understand and adapt existing foundation models for downstream scientific tasks.

Publications

- **Generative Modeling Reveals the Connection Between Cellular Morphology and Gene Expression. Shuo Wen** et al. Manuscript under review.
- **With Limited Data for Multimodal Alignment, Let the STRUCTURE Guide You.** Fabian Gröger*, **Shuo Wen***, Huyen Le, Maria Brbić. NeurIPS 2025.
- **Cross-domain Open-world Discovery. Shuo Wen**, Maria Brbić. ICML 2024.
- **Human Action Transfer Based on 3D Model Reconstruction [Oral].** Shanyan Guan*, **Shuo Wen***, Dexin Yang*, Bingbing Ni, Wendong Zhang, Jun Tang, Xiaokang Yang. AAAI 2019.

Talks and Presentations

- **COSMIC: A Multimodal Generative Model of Transcriptome and Cell Morphology**
  SCG Conference, Stockholm, 2025
- **Foundation Models for Modeling the Complexity of Life and Molecules**
  Swiss AI Industry Connect, Bern, 2025
- **With Limited Data for Multimodal Alignment, Let the STRUCTURE Guide You**
  EPFL Pre-NeurIPS, Lausanne, 2025

Teaching Experience

- CS-401: Applied Data Analysis, EPFL; Head TA — Fall 2025
- The upgrade course (MAN), EPFL — Spring 2025
- CS-401: Applied Data Analysis, EPFL — Fall 2024
- CS-250: Algorithms I, EPFL — Spring 2024
- CS-502: Deep Learning in Biomedicine, EPFL; Head TA (Best TA Award) — Fall 2023
- CS-442: Computer Vision, EPFL — Spring 2021

Awards

- Awarded Swiss AI PhD Fellowship. — 2025
- Bonus in recognition of outstanding performance (CHF 1000), EPFL — 2025
- Best TA Award, EPFL — 2024
- Academic Excellence Scholarship, Shanghai Jiao Tong University — 2016 & 2017
- Outstanding Volunteer in Shanghai — 2016 & 2017

Reviewing Experience

- ICML, NeurIPS - Reviewer — 2023 - 2025
- TNNLS - Journal Reviewer — 2024