Po-han Li

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Research Interests

I study multimodal foundation models and human-aligned reasoning. I work on representation learning and cross-modal data translation—specifically video captioning, converting video into concise language and keyframe summaries, and turning sensor streams into structured symbolic traces—under tight data budgets and zero-GPU compute. I build lean evaluation frameworks for video-to-text generation that measure reliability, expose failure patterns in captioning and summarization, and reveal stress points in real deployments. I also create human-AI interaction systems that strengthen human oversight of VLMs and LLMs and improve alignment of their reasoning.

Education

University of Texas at Austin Aug. 2023 – Present (Expected Summer 2026)
Ph.D. Candidate in Electrical and Computer Engineering *Texas, U.S.A.*

- Decision, Information, and Communications Engineering (DICE) track
- Co-advised by Prof. Sandeep Chinchali and Prof. Ufuk Topcu
- GPA: 3.93/4.00

University of Texas at Austin Aug. 2021 – May 2023
M.S. in Electrical and Computer Engineering *Texas, U.S.A.*

- Decision, Information, and Communications Engineering (DICE) track

National Taiwan University Sep. 2016 – Jul. 2020
B.S. in Electrical Engineering *Taipei, Taiwan*

- Research Advisor: Prof. Wanjiun Liao (廖婉君)
- GPA: overall: 4.26/4.30 (3.99/4.0), last 60: 4.29/4.30. Ranking: 4/177
- Honors: Dean's List (2016 Fall, 2017 Spring, and 2018 Fall)
- College Student Research Scholarship from the Ministry of Science and Technology (2017-2019)

Publications

For a complete list of my publications, please check my Google Scholar.

First-Author Publications:

1. **P. Li***, S. Chen*, S. Chichali, and U. Topcu. VIBE: Video-to-text information bottleneck evaluation for TL;DR. *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2025

2. N. P. Bhatt, **P. Li**, and K. Gupta et. al. UNCAP: Uncertainty-guided planning using natural language communication for cooperative autonomous vehicles. In *International Conference on Autonomous Agents and Multi-Agent Systems (**AAMAS**)*, 2025

3. **P. Li**, Y. Yang, M. Omama, S. Chinchali, and U. Topcu. Any2Any: Incomplete multimodal retrieval with conformal prediction. *Under review*, 2025

4. **P. Li**, S. Chinchali, and U. Topcu. CSA: Data-efficient mapping of unimodal features to multimodal features. *International Conference on Learning Representations (**ICLR**)*, 2025

5. **P. Li**, S. K. Ankireddy, R. Zhao, H. N. Mahjoub, E. Moradi-Pari, U. Topcu, S. Chinchali, and H. Kim. Task-aware distributed source coding under dynamic bandwidth. *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2023

Other Publications:

1. M. Omama, **P. Li**, and S. Chinchali. Exploiting distribution constraints for scalable and efficient image retrieval. *International Conference on Learning Representations (**ICLR**)*, 2025

2. O. Akcin, **P. Li**, S. Agarwal, and S. Chinchali. Decentralized data collection for robotic fleet learning: A game-theoretic approach. In *Conference on Robot Learning (**CoRL**)*, 2022

3. Y. Geng, D. Zhang, **P. Li**, O. Akcin, A. Tang, and S. Chinchali. Decentralized sharing and valuation of fleet robotic data. In *Conference on Robot Learning (**CoRL**)*, 2021

Work Experience

Meta Platforms, Inc. May 2025 – Aug. 2025
Software Engineer Intern @ Monetization GenAI *California, U.S.A*

- Utilized automation tools to extract key information from external websites, supporting ML-driven advertisement generation
- Aligned website source code with visual snapshot analysis, contributing to the design of evaluation pipelines for quality ad generation
- Engineered robust evaluation metrics to assess the effectiveness of unsupervised generated advertisements

Meta Platforms, Inc. May 2024 – Aug. 2024
Software Engineer Intern @ Infra+Ranking & Foundational AI *California, U.S.A*

- Calibrated Meta's multimodal foundation AI model for ads ranking
- Analyzed model performance and tracking of iterative training, supporting the development of robust evaluation benchmarks
- Developed highly scalable classifiers and tools leveraging Python and machine learning techniques, incorporating data preprocessing and exploratory analysis
- Adapted standard machine learning methods for distributed clusters, illustrating proficiency in model iteration and integrating heterogeneous data sources

China Network Systems Co., Ltd. Oct. 2019 – Mar. 2021
Machine Learning and Data Scientist Intern *Taipei, Taiwan*

- Analyzed data patterns and built prediction models for **churn rate (unsubscribe) prediction**
- Used Raspberry Pi distributed in the core net and network terminals to collect network-quality data
- Created databases and interactive reports to monitor **over 1M set-top boxes** in real-time

Internet Research Lab Aug. 2019 – Jun. 2020
Research Assistant @ National Taiwan University *Taipei, Taiwan*

- Participated in *5G mobile edge computing technology research and platform construction* project supported by the Ministry Of Science And Technology
- Enhanced the quality of service (QoS) of multi-view 3D videos by **reinforcement learning**

Academic Service

Reviewer Aug. 2021 - Present

- Reviewer of ICML, NeurIPS, ICLR, CVPR, MLSys, AAAI, AISTATS, IEEE Systems Journal, IROS, and ICRA.

Extracurricular Activities

UT Girl Day
Volunteer Feb. 2023 and Feb. 2024

- Taught Python basics using AutoAuto cars; reached 200+ visitors of all ages. **link**

Code2College
Mentor Jul. 2022 – Jul. 2024

- Mentored underrepresented high school graduates to prepare for software engineering jobs or college interviews.

REACT REU
Mentor Aug. 2023

- Instructed undergraduate students to improve real-time computer vision models, excelling in image classification and object detection using Python.

Student Council of National Taiwan University
Member of Parliament Jan. 2019 – May 2019

- Voiced concern about potential cyber security issues of the electrical voting system.