Jiachen Lian

cell: 607.262.6945
jiachenlian@berkeley.edu
Google Scholar

Education

University of California, Berkeley Ph.D. in CS (2021–2026)
Advisor: Gopala Anumanchipalli; Also with Shankar Sastry, Marilu Gorno Tempini

Carnegie Mellon University M.S. in ECE (2020)
Advisor: Bhiksha Raj

Zhejiang University B.Eng. in EE (2019)

Research Interests

I build interpretable, human-centered foundation models — and the systems and robots that bring them into the real world.

- **Interpretable-by-design, mechanistically grounded foundation models.** I develop foundation models whose internal representations are structured and inspectable, and whose reasoning, planning, and dynamics can be examined and controlled.
- **Human-centered speech AI systems.** I build speech AI that is grounded in human cognition and physiology (perception, production, physics) and that keeps people in the loop through interactive labeling, feedback, and supervision.
- **Controllable robots and inverse problems.** I work toward robots whose actions we can steer, predict, and understand.
- **Human-AI collaboration and deployment in high-stakes healthcare settings.** I build collaborative, deployed systems for precision and public health — speech and language disorders such as dyslexia and primary progressive aphasia, and population-level language screening.

Clinical Experience

Visitor, University of California, San Francisco (UCSF) | Memory and Aging Center; Dyslexia Center 2025.09–2025.12
Host: Marilu Gorno Tempini

- Human-AI-Collaborative Diagnosis and Treatment of Speech Language Disorders

Industrial Experience

Visiting Researcher, MSL, Meta 2024.09–2026.06
Mentor: Abdelrahman Mohamed

- White-box Speech AI Modeling
- LLaMA4: Speech and Audio-Visual Foundation Models (In Collaboration with LLaMA and Seamless Team)

Visiting Researcher, FAIR, Meta 2023.10–2024.05
Mentor: Wei-Ning Hsu

- Multi-Modal Conversational AI and Interaction Modeling

Research Intern, FAIR, Meta 2022.05–2022.12
Mentor: Alexei Baevski, Wei-Ning Hsu, Michael Auli

- Self-supervised Audio-Visual Representation Learning

Research Intern, Tencent US | With Chunlei Zhang, Dong Yu 2021.04–2022.5

- Speech Synthesis

Publications (Selected)

† Project Lead & Originator

1. Jet M.J. Vonk* (co-first), **Jiachen Lian*** (co-first)†, Zoe Ezzes, Lisa Wauters, Cheol Jun Cho, Brittany T. Morin, Rian Bogley, Diana Rodriguez, Boon Lead Tee, Jessica DeLeon, Zachary Miller, Maria Luisa Mandelli, Gopala Krishna Anumanchipalli* (co-last), Maria Luisa Gorno-Tempini* (co-last). "Automated Lexical Dysfluency Analysis to Differentiate Primary Progressive Aphasia Variants". *Alzheimer's Association International Conference*, 2025. (*Oral Presentation. AI models assist doctors in diagnosing speech language disorders with high clinical alignment!*)
2. **Jiachen Lian**†, Xuanru Zhou, Chenxu Guo, Zongli Ye, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Automatic Detection of Articulatory-Based Disfluencies in Primary Progressive Aphasia". 2025 Journal of Selected Topics in Signal Processing (JSTSP) *Deployed at UCSF dyslexia center and to be deployed at K–5 Schools in California!*
3. **Jiachen Lian**†, Xuanru Zhou, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "SSDM: Scalable Speech Dysfluency Modeling". 2024 NeurIPS (*NeurIPS Scholar Award*)
4. **Jiachen Lian**†, Carly Feng, Naasir Farooqi, Steve Li, Anshul Kashyap, Cheol Jun Cho, Peter Wu, Robert Netzorg, Tingle Li, Gopala Anumanchipalli. "Unconstrained Dysfluency Modeling for Dysfluent Speech Transcription and Detection" 2023 ASRU. [*2024 Sevin Rosen Award*] (*Best Paper Nomination*)

Publications (Accepted, Full List)

† Project Lead & Originator

1. Xuanru Zhou*, **Jiachen Lian***†, Henry Hong, Xinyi Yang, Gopala Anumanchipalli. "Speech World Model: Causal State–Action Planning with Explicit Reasoning for Speech." 2026 ICLR
2. Guan-Ting Lin, Shih-Yun Shan Kuan, Qirui Wang, **Jiachen Lian**, Tingle Li, Hung-yi Lee. "Full-Duplex-Bench v1.5: Evaluating Overlap Handling for Full-Duplex Speech Models." 2026 ICASSP
3. Chenxu Guo*, Shuhe Li*, **Jiachen Lian***†, Cheol Jun Cho, Wenshuo Zhao, Xiner Xu, Ruiyu Jin, Xiaoyu Shi, Xuanru Zhou, Dingkun Zhou, Sam Wang, Grace Wang, Jingze Yang, Jingyi Xu, Ruohan Bao, Elise Brenner, Brandon In, Francesca Pei, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "K-Function: Joint Pronunciation Transcription and Feedback for Evaluating Kids Language Function." 2026 ICASSP (*2025 ASRU AI4CSL Best Paper*)
4. Weiting Tan, **Jiachen Lian**, Hirofumi Inaguma, Paden Tomasello, Philipp Koehn, Xutai Ma. "Seeing is Believing: Emotion-Aware Audio-Visual Language Modeling for Expressive Speech Generation". 2025 EMNLP Findings (*Oral Presentation*)
5. Zongli Ye, **Jiachen Lian**†, Akshaj Gupta, Xuanru Zhou, Krish Patel, Haodong Li, Hwi Joo Park, Chenxu Guo, Shuhe Li, Sam Wang, Cheol Jun Cho, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, Rian Bogley, Lisa Wauters, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "LCS-CTC: Leveraging Soft Alignments to Enhance Phoneme-Level ASR Robustness". 2025 ASRU
6. Guan-Ting Lin, **Jiachen Lian**, Tingle Li, Qirui Wang, Gopala Anumanchipalli, Alexander H. Liu, Hung-yi Lee. "Full-Duplex-Bench: A Benchmark to Evaluate Full-duplex Spoken Dialogue Models on Turn-taking Capabilities". 2025 ASRU
7. Jingwen Liu, Kan Jen Cheng, Akshay Anand, Rishi Jain, Faith Qiao, Robin Netzorg, Huang-Cheng Chou,Tingle Li, **Jiachen Lian**†, Guan-Ting Lin, Gopala Anumanchipalli. "EMO-Reasoning: Benchmarking Emotional Reasoning Capabilities in Spoken Dialogue Systems". 2025 ASRU
8. Jet M.J. Vonk* (co-first), **Jiachen Lian*** (co-first)†, Zoe Ezzes, Lisa Wauters, Cheol Jun Cho, Brittany T. Morin, Rian Bogley, Diana Rodriguez, Boon Lead Tee, Jessica DeLeon, Zachary Miller, Maria Luisa Mandelli, Gopala Krishna Anumanchipalli* (co-last), Maria Luisa Gorno-Tempini* (co-last). "Automated Lexical Dysfluency Analysis to Differentiate

Primary Progressive Aphasia Variants". *Alzheimer's Association International Conference*, 2025. (*Oral Presentation. AI Models can now Diagnose nfvPPA and lvPPA!*)

9. **Jiachen Lian**†, Xuanru Zhou, Chenxu Guo, Zongli Ye, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Automatic Detection of Articulatory-Based Disfluencies in Primary Progressive Aphasia". 2025 Journal of Selected Topics in Signal Processing (JSTSP)
10. Chenxu Guo, **Jiachen Lian**†, Xuanru Zhou, Jinming Zhang, Shuhe Li, Zongli Ye, Anaisha Das, Peter Park, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, Rian Bogley, Lisa Wauters, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Dysfluent WFST: A Framework for Zero-Shot Speech Dysfluency Transcription and Detection". 2025 Interspeech *(Oral Presentation)*
11. Zongli Ye, **Jiachen Lian**†, Xuanru Zhou, Jinming Zhang, Shuhe Li, Chenxu Guo, Gopala Krishna Anumanchipalli. "Seamless Dysfluent Speech Alignment for Disordered Speech Analysis". 2025 Interspeech
12. Xuanru Zhou, **Jiachen Lian**†, Cheol Jun Cho, Tejas Prabhune, William Li, Rodrigo Ortiz, Shuhe Li, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, Rian Bogley, Lisa Wauters, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Towards Accurate Phonetic Error Detection Through Phoneme Similarity Modeling". 2025 Interspeech *(Oral Presentation)*
13. Jinming Zhang, Xuanru Zhou, **Jiachen Lian**†, Shuhe Li, William Li, Zoe Ezzes, Rian Bogley, Lisa Wauters, Zachary A. Miller, Jet M.J. Vonk, Brittany T. Morin, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Analysis and Evaluation of Synthetic Data Generation in Speech Dysfluency Transcription". 2025 Interspeech
14. Xuanru Zhou, Cheol Jun Cho, Ayati Sharma, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, **Jiachen Lian***†, Gopala Anumanchipalli*. "Stutter-Solver: End-to-end Multilingual Dysfluency Detection". 2024 SLT (*Travel Grant Award*)
15. **Jiachen Lian**†, Xuanru Zhou, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "SSDM: Scalable Speech Dysfluency Modeling". 2024 NeurIPS (*NeurIPS Scholar Award*)
16. Xuanru Zhou, Anshul Kashyap, Steve Li, Ayati Sharma, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, **Jiachen Lian***†, Gopala Anumanchipalli*. "Yolo-Stutter: End-to-end Region-wise Speech Dysfluency Detection". 2024 Interspeech (* Equal Advising) (*Travel Grant Award*)
17. Haoming Guo, Zhihao Zhao, **Jiachen Lian***, Gopala Anumanchipalli*, Gerald Friedland*. "Enhancing GAN-Based Vocoders with Contrastive Learning Under Data-limited Condition". 2024 ICASSP (* Equal Advising)
18. **Jiachen Lian**†, Gopala Anumanchipalli. "Towards Hierarchical Spoken Language Disfluency Modeling". 2024 EACL, main conference (*Oral Presentation*)
19. **Jiachen Lian**†, Carly Feng, Naasir Farooqi, Steve Li, Anshul Kashyap, Cheol Jun Cho, Peter Wu, Robert Netzorg, Tingle Li, Gopala Anumanchipalli. "Unconstrained Dysfluency Modeling for Dysfluent Speech Transcription and Detection" 2023 ASRU. [*2024 Sevin Rosen Award*] (*Best Paper Nomination, Deployed at UCSF dyslexia center and to be deployed at K–5 Schools in California!*)
20. **Jiachen Lian**†, Alexei Baevski, Wei-Ning Hsu, Michael Auli. "AV-data2vec: Self-supervised Learning of Audio-Visual Speech Representations with Contextualized Target Representations". 2023 ASRU
21. Peter Wu, Tingle Li, Yijing Lu, Yubin Zhang, **Jiachen Lian**, Alan Black, Louis Goldstein, Shinji Watanabe, Gopala Anumanchipalli. "Deep Speech Synthesis from MRI-Based Articulatory Representations". 2023 Interspeech
22. **Jiachen Lian**†, Alan Black, Yijing Lu, Louis Goldstein, Shinji Watanabe, Gopala Krishna Anumanchipalli. "Articulatory Representation Learning Via Joint Factor Analysis and Neural Matrix Factorization". 2023 ICASSP
23. **Jiachen Lian**†, Chunlei Zhang, Gopala Krishna Anumanchipalli, Dong Yu. "UTTS: Unsupervised TTS with Conditional Disentangled Sequential Variational Auto-encoder". IEEE TASLP

24. **Jiachen Lian**†, Alan Black, Louis Goldstein, Gopala Krishna Anumanchipalli. "Deep Neural Convolutive Matrix Factorization for Articulatory Representation Decomposition". 2022 Interspeech

25. **Jiachen Lian**†, Chunlei Zhang, Gopala Krishna Anumanchipalli, Dong Yu. "Towards Improved Zero-shot Voice Conversion with Conditional DSVAE". 2022 Interspeech

26. **Jiachen Lian**†, Chunlei Zhang, Dong Yu. "Robust Disentangled Variational Speech Representation Learning for Zero-Shot Voice Conversion". 2022 ICASSP

27. **Jiachen Lian**†, Aiswarya Vinod Kumar, Hira Dhamyal, Bhiksha Raj, Rita Singh. "Masked Proxy Loss for Text-Independent Speaker Recognition". 2021 Interspeech (*Travel Grant Award*)

28. Yang Gao, **Jiachen Lian**, Bhiksha Raj and Rita Singh. "Detection and evaluation of Human and Machine Generated Speech in Spoofing Attacks on Automatic Speaker Verification Systems." 2021 SLT

Manuscripts (Under Review / Pre-print)

† Project Lead & Originator

1. Dingkun Zhou, Shuchang Pan, **Jiachen Lian**†, Siddharth Banerjee, Sarika Pasumarthy, Dhruv Hebbar, Siddhant Patel, Zeyi Austin Li, Kan Jen Cheng, Sanay Bordia, Krish Patel, Akshaj Gupta, Tingle Li, Gopala Anumanchipalli. "Conversational Behavior Modeling Foundation Model With Multi-Level Perception". (arXiv:2602.11065)
2. Harrison Li, Kevin Wang, Cheol Jun Cho, **Jiachen Lian**†, Rabab Rangwala, Chenxu Guo, Emma Yang, Lynn Kurteff, Zoe Ezzes, Willa Keegan-Rodewald, Jet Vonk, Siddarth Ramkrishnan, Giada Antonicelli, Zachary Miller, Marilu Gorno Tempini, Gopala Anumanchipalli. "HASS: Hierarchical Simulation of Logopenic Aphasic Speech for Scalable PPA Detection". (2026 Interspeech In Submission)
3. Bixing Wu, Yuhong Zhao, Zongli Ye, **Jiachen Lian**, Xiangyu Yue, Gopala Anumanchipalli. "Asymmetric Hierarchical Anchoring for Audio-Visual Joint Representation: Resolving Information Allocation Ambiguity for Robust Cross-Modal Generalization". (2026 NeurIPS In Submission)
4. Chenxu Guo, **Jiachen Lian**†, Yisi Liu, Baihe Huang, Shriyaa Narayanan, Cheol Jun Cho, Gopala Anumanchipalli. "HuPER: A Human-Inspired Framework for Phonetic Perception". (2026 NeurIPS In Submission; arXiv:2602.01634)
5. Akshay Anand, Chenxu Guo, Cheol Jun Cho, **Jiachen Lian**†, Gopala Anumanchipalli. "Teaching Machines to Speak Using Articulatory Control." (arXiv:2510.05619)
6. Krish Patel, Dingkun Zhou, Ajay Kankipati, Akshaj Gupta, Zeyi Austin Li, Mohul Shukla, Vibhor Narang, Sara Kofman, Zongli Ye, Grace Wang, Xiaoyu Shi, Tingle Li, Guan-Ting Lin, Kan Jen Cheng, Huang-Cheng Chou, **Jiachen Lian**†, Gopala Anumanchipalli. "AV-EMO-REASONING: Benchmarking Emotional Reasoning Capabilities in Omni-Modal LLMs with Audio-Visual Cues." (2026 Interspeech In Submission; arXiv:2510.07355)
7. Akshaj Gupta, Andrea Guzman, Anagha Badriprasad, Hwi Joo Park, Upasana Puranik, Robin Netzorg, **Jiachen Lian**†, Gopala Krishna Anumanchipalli. "TART: A Comprehensive Tool for Technique-Aware Audio-to-Tab Guitar Transcription." (2026 ISMIR In Submission; arXiv:2510.02597)
8. Xuanru Zhou, **Jiachen Lian**†, Cheol Jun Cho, Zoe Ezzes, Jet M.J. Vonk, Brittany T. Morin, David Paul Galang Baquirin, Zachary A. Miller, Maria Luisa Gorno-Tempini, Gopala Anumanchipalli. "Time and Tokens: Benchmarking End-to-End Speech Dysfluency Detection". (arXiv:2409.13582)
9. Weiwei Lin, Chenhang HE, Man-Wai Mak, **Jiachen Lian**, Kong Aik Lee. "VoxGenesis: Unsupervised Discovery of Latent Speaker Manifold for Speech Synthesis". (arXiv:2403.00529)
10. Yushi Hu, Chunlei Zhang, Jiatong Shi, **Jiachen Lian**, Mari Ostendorf, Dong Yu. "ProsodyBERT: Self-Supervised Prosody Representation for Style-Controllable TTS". (Preprint)

Patents

1. Gopala Anumanchipalli, **Jiachen Lian**. "Systems and Methods for Disfluent Speech Transcription and Detection." US Patent Application No. 19/043,273, Publication Date: July 31, 2025.
2. Chunlei Zhang*, **Jiachen Lian***, Dong Yu. "Techniques for Disentangled Variational Speech Representation Learning for Zero-Shot Voice Conversion." US Patent No. 12354594, Application No. 17723662, Publication Date: July 8, 2025.
3. Chunlei Zhang*, **Jiachen Lian***, Dong Yu. "Text to Speech Synthesis without Using Parallel Text-Audio Data." US Patent No. 12159620, Application No. 17953851, Publication Date: December 3, 2024.
4. Chunlei Zhang*, **Jiachen Lian***, Dong Yu. "Techniques for Improved Zero-Shot Voice Conversion with a Conditional Disentangled Sequential Variational Auto-Encoder." US Patent Application No. 17826987, Publication Date: November 30, 2023.

Open Sourced Contributions

1. **The Llama 4 herd: The beginning of a new era of natively multimodal AI innovation.** Meta AI Blog, 2025. `https://ai.meta.com/blog/llama-4-multimodal-intelligence/`

Reviewer Activity

Area Chair: ICASSP. **Program Chair:** ASRU AI4CSL Workshop. **Peer Reviewer:** ACL, AISTATS, CVPR, ICCV, ICLR, ICML, Interspeech, NeurIPS, TMLR.

Workshops

Dec 2025 **Towards Fair, Precise and Interactive AI for Children's Speech and Language**, 2025 ASRU, Hawaii, USA. *Founder & Lead Organizer* (with Jialu Li, Anna Seo Gyeong Choi, Anfeng Xu, Tiantian Feng, Haolong Zheng, Xulin Fan, Mohammad Nur Hossain Khan, Bashima Islam, Shinji Watanabe)

Nov 2025 **First Bay Area Speech AI Healthcare Workshop**, Berkeley, USA. *Founder & Lead Organizer* (with Gopala Anumanchipalli, Kevin Wang, Maggie Dong, Sanjana Tawar)

Invited Talks

Apr 2026 *Automated Speech Analysis in Dyslexia*, **Schwab DCDC Spring Symposium** (jointly with Gopala Anumanchipalli)[1]

Feb 2026 *Building AI for Speech Healthcare: From Real World Need to Scalable Technology*, **ChangeLing Lab at CMU LTI**

Dec 2025 *New Method for Speech Synthesis: Generating Speech with Articulatory Control*, **ISCA SIGML**

Dec 2025 *Towards Universal Kids' Language Function Evaluation*, **ASRU Satellite Workshop: Towards Fair, Precise, and Interactive AI for Children's Speech and Language** (jointly with Gopala Anumanchipalli)

Sep 2025 *Scalable Speech Dysfluency Modeling*, **12th Disfluency in Spontaneous Speech Workshop**, Lisbon, Portugal (jointly with Gopala Anumanchipalli)

Sep 2025 *Towards Human-Centric Audio-Visual Perceptual Intelligence*, **Meta FAIR**

Oct 2024 *Speech AI Technology for Healthcare and Language Education*, **Salesforce AI Research**

Mar 2024 *Towards Speech Dysfluency Modeling*, **UCSF Dyslexia Center**

Oct 2023 *Towards Speech Dysfluency Modeling*, **UCSF Dyslexia Center**

Awards

- 2025 Radical Ventures AI Founders Grant ($350K)
- 2025 ASRU AI4CSL Best Paper
- 2024 Meta AI Mentorship (AIM) Program — 2-Year PhD Funding
- 2024 NeurIPS Scholar Award
- 2024 Sevin Rosen Funds Award
- 2023 ASRU Best Paper Nomination
- 2021 Berkeley Golden Fellowship

[1] `https://schwabcognitivediversity.ucsf.edu/content/schwab-dcdc-spring-symposium-2026`

Teaching Experience

EECS 106A/206A - Introduction to Robotics, UC Berkeley — 2024 Fall
Instructor: Roberto Horowitz

EE 225D - Audio Signal Processing in Humans and Machines, UC Berkeley — 2022 Fall
Instructor: Gopala Anumanchipalli

LTI 11785 - Introduction to Deep Learning, CMU — 2020 Fall
Instructor: Bhiksha Raj

Selected Core Undergraduates/Masters

Name	**Period**	**Next**
Peter Wu	2021–2022	UC Berkeley EECS PhD (2022 Fall)
Nicholas Lee	2021–2022	UC Berkeley EECS PhD (2023 Fall)
Zhihao Zhao	2022–2023	UCLA CS PhD (2023 Fall)
Xavier Yin	2023–2024	CMU LTI PhD (2025 Fall)
Ayati Sharma	2023–2024	Oxford CS Master → ELLIS PhD (2025 Fall)
Xuanru Zhou	2023–2026	JHU CS PhD (2026 Fall)
Sarika Pasumarthy	2025–2026	Columbia CS PhD (2026 Fall)
Zongli Ye	2024–2025	CUHK MMLab PhD (2026 Fall)
Jingwen Liu	2024–2025	Peking University PhD (2026 Fall)
Kan Jen Cheng	2024–2026	UMD CS PhD (2026 Fall)
Carly Feng	2022–2023	Amazon
Haoming Guo	2022–2023	Apple
Naasir Farooqi	2022–2023	Conversion
Anvitha Kachinthaya	2022–2024	MIT → Doppel
Chenxu Guo	2024–2026	Qwen
Akshay Anand	2025–2026	OpenAI
Socrates Osorio	2025–2026	OpenAI
Rishi Jain	2024–2025	Tavus
Catherine Chu	2023–2024	Microsoft
Steven Li	2022–2023	Founder, Haize Labs
Ojas Karnavat	2023–2024	Founder, Grata Health