

Dr. Michael Chen, Ph.D.

Associate Professor of Computer Science

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RESEARCH INTERESTS

Machine Learning, Natural Language Processing, Deep Learning Architectures, Neural Machine Translation, Transfer Learning, Few-Shot Learning, Multimodal AI Systems

EDUCATION

Ph.D. in Computer Science, Stanford University, 2015

Dissertation: "Neural Approaches to Cross-Lingual Transfer Learning in Low-Resource Languages"

Advisor: Prof. Andrew Ng

M.S. in Computer Science, Stanford University, 2012

B.S. in Computer Science, UC Berkeley, 2010

Summa Cum Laude, Phi Beta Kappa

ACADEMIC POSITIONS

Associate Professor

2021 - Present

Massachusetts Institute of Technology, Department of Computer Science

Assistant Professor

2016 - 2021

Massachusetts Institute of Technology, Department of Computer Science

Postdoctoral Researcher

2015 - 2016

Google Brain, Mountain View, CA

SELECTED PUBLICATIONS

(* indicates equal contribution, † indicates corresponding author)

Chen, M.* , Zhang, L.* , and Smith, J.† "Efficient Few-Shot Learning through Adaptive Meta-Learning Architectures." *Nature Machine Intelligence*, vol. 5, pp. 234-247, 2024.

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Wang, Y., Chen, M.†, and Liu, H. "Multimodal Transformer Networks for Vision-Language Understanding." *NeurIPS* 2022, pp. 8934-8945, 2022.

Chen, M., Thompson, R., and Davis, K. "Attention Mechanisms for Contextual Word Embeddings in Neural Networks." *ICML* 2021, pp. 2134-2146, 2021.

Chen, M.† and Ng, A. "Transfer Learning Approaches for Neural Machine Translation in Low-Resource Settings." *Computational Linguistics*, vol. 46, no. 3, pp. 567-592, 2020.

Lee, S., Chen, M., and Patel, N. "Deep Learning for Sentiment Analysis in Multilingual Social Media Data." *EMNLP* 2019, pp. 3421-3432, 2019.

Chen, M., Garcia, P., and Anderson, T. "Improving Neural Network Generalization through Curriculum Learning." *ICLR* 2018, pp. 1123-1135, 2018.

Chen, M., Brown, K., and Wilson, J. "Recurrent Neural Networks for Sequence-to-Sequence Learning in Machine Translation." *Proceedings of ACL* 2017, pp. 892-903, 2017.

Martinez, L., Chen, M.* , and Johnson, R.* "Word Embeddings for Cross-Lingual Information Retrieval." *SIGIR* 2016, pp. 645-654, 2016.

GRANTS & FUNDING

National Science Foundation CAREER Award (2022-2027)

"Efficient Few-Shot Learning for Neural Machine Translation" • \$500,000

Google Research Award (2021-2023)

"Multimodal Transfer Learning for Vision-Language Tasks" • \$100,000

Amazon Research Award (2020-2022)

"Neural Approaches to Cross-Lingual Transfer" • \$75,000

NSF Research Grant (2018-2021)

"Deep Learning for Low-Resource Languages" • \$350,000 (Co-PI)

TEACHING EXPERIENCE

CS 6.867: Machine Learning (Graduate) • MIT • Fall 2016-Present

CS 6.864: Advanced Natural Language Processing (Graduate) • MIT • Spring 2017-Present

CS 6.034: Artificial Intelligence (Undergraduate) • MIT • Fall 2018-2022

GRADUATE STUDENTS ADVISED

Ph.D. Students (Current):

- Sarah Johnson (2021-Present) - Few-Shot Learning for NLP
- David Kim (2022-Present) - Multimodal AI Systems
- Emily Rodriguez (2023-Present) - Neural Machine Translation

Ph.D. Students (Graduated):

- Lisa Zhang (2018-2023) - Now Assistant Professor at Carnegie Mellon University
- Alex Patel (2017-2022) - Now Research Scientist at DeepMind

Master's Students: 12 graduated (2016-2024)

HONORS & AWARDS

- ACL Best Paper Award, Association for Computational Linguistics (2023)
- NSF CAREER Award, National Science Foundation (2022)
- MIT Junior Faculty Teaching Award (2020)
- Google Faculty Research Award (2021)
- Outstanding Dissertation Award, Stanford Computer Science (2016)
- ICML Travel Award (2014, 2015)
- Stanford Graduate Fellowship (2010-2012)

PROFESSIONAL SERVICE

Conference Organization:

- Area Chair, ACL (2022, 2023, 2024)
- Senior Program Committee, AAAI (2021-2024)
- Workshop Co-Chair, EMNLP (2022)
- Tutorial Chair, NAACL (2021)

Program Committee Member:

- NeurIPS (2017-2024), ICML (2018-2024), ICLR (2019-2024)
- ACL (2017-2024), EMNLP (2017-2024), NAACL (2018-2024)

Journal Reviewing:

- Computational Linguistics, Journal of Machine Learning Research
- Transactions of ACL, IEEE Transactions on Neural Networks

Department Service:

- Graduate Admissions Committee, MIT CS (2020-2023)
- Faculty Search Committee, MIT CS (2021-2022)
- Curriculum Development Committee, MIT CS (2019-2021)

SELECTED INVITED TALKS

- "Few-Shot Learning in Natural Language Processing" • Stanford AI Lab (2024)
- "Cross-Lingual Transfer Learning" • Google Research (2023)
- "Multimodal AI Systems" • Meta AI Research (2023)
- "Neural Machine Translation for Low-Resource Languages" • Microsoft Research (2022)
- "Deep Learning for NLP" • Carnegie Mellon University (2021)
- "Transfer Learning in Neural Networks" • UC Berkeley (2020)

TECHNICAL SKILLS

Programming: Python, C++, Java, CUDA, PyTorch, TensorFlow, JAX, Hugging Face Transformers

Languages: English (Native), Mandarin Chinese (Native), Spanish (Intermediate)

PROFESSIONAL MEMBERSHIPS

ACM (Association for Computing Machinery), IEEE (Institute of Electrical and Electronics Engineers), ACL (Association for Computational Linguistics), AAAI (Association for the Advancement of Artificial Intelligence)