

Ming-Chang Chiu

3710 McClintock Ave, Los Angeles, CA 90089 • <http://charismaticchiu.github.io/>
mingchac@usc.edu • <https://www.linkedin.com/in/eric-chiu> • <https://github.com/charismaticchiu>

EDUCATION

University of Southern California (USC)

Los Angeles, CA

Ph.D. in Computer Science

Aug 2018 – Dec 2019, Aug 2020 – Aug 2024 (Exp.)

- Advisor: Prof. Xuezhe Ma

- Interests: Domain Generalization, Reliable & Responsible AI, Healthcare Vision, Data Augmentation

- Invited to pitch at Y Combinator China for a \$1M funding

University of Southern California (USC)

Los Angeles, CA

M.S. in Electrical Engineering

Aug 2016 – May 2018

- Advisor: Prof. Stefan Scherer

National Tsing Hua University (NTHU)

Hsinchu, Taiwan

B.S. in Computer Science & Electrical Engineering

Sep 2011 – Jun 2015

- Advisors: Prof. Min Sun and Jerry Chou

- Honorary Member of Phi Tau Phi Scholastic Society (**top 1%**)

- Foreign Exchange Scholarship: **\$10k**

University of Minnesota

Twin Cities, MN

Exchange Student in Computer Science and Engineering

Fall 2014

Tsinghua University

Beijing, China

Summer Exchange Student in Computer Science

Summer 2012

PUBLICATIONS

- VideoPoet: A Large Language Model for Zero-Shot Video Generation, *In Preparation*. [ArXiv](#), [Blog](#)
- SpurSuite: A New Benchmark for Context-Aware Robustness. **M.-C. Chiu**, P.-Y. Chen, X. Ma, *In Preparation*.
- MultiCat: Does Visual Multiplicity Benefit Visual Recognition Generalization and Robustness? **M.-C. Chiu**, P. Xiang, P.-Y. Chen, X. Ma, *In Preparation*.
- DDI-CoCo: Understanding the Effect of Color Contrast in Machine-Assisted Skin Disease Detection. **M.-C. Chiu***, Y. Wang*, J.-J. Kuo, P.-Y. Chen, *In ICASSP 2024*. [Link](#) *Long Ver. Submitted to Nature Machine Intelligence*.
- COLORSENSE: A Comparative Study on Color Vision of Machine Visual Recognition. **M.-C. Chiu**, Y. Wang, D.E. Kim, P.-Y. Chen, X. Ma. *Submitted to CVPR 2024*. [Paper](#)
- On Human Visual Contrast Sensitivity and Machine Vision Robustness: A Comparative Study. **M.-C. Chiu**, Y. Wang, D.E. Kim, P.-Y. Chen, X. Ma. [arXiv](#)
- Better May Not Be Fairer: A Study on Subgroup Discrepancy in Image Classification **M.-C. Chiu**, P.-Y. Chen, X. Ma. In *ICCV 2023*. [arXiv](#)
- Robust Representation Learning for Group Shifts and Adversarial Examples. **M.-C. Chiu**, X. Ma. In *NeurIPS 2022 ML Safety*. [Link](#)
- Screenplay Quality Assessment: Can We Predict Who Gets Nominated? **M.-C. Chiu**, Tiantian Feng, Xiang Ren, Shrikanth Narayanan. In *ACL NUSE 2020*.
- Automated Empathy Detection for Oncology Encounters. Z. Chen, J. Gibson, **M.-C. Chiu**, Q. Hu, T. K. Knight, D. Meeker, J. A. Tulsy, K. I. Pollak and S. Narayanan. In *IEEE Int'l Conf. on Healthcare Information (ICHI) 2020*.
- A system for the 2019 Sentiment, Emotion and Cognitive State Task of DARPA's LORELEI project. V. Martinez, A. Ramakrishna, **M.-C. Chiu**, K. Singla, and S. Narayanan. In *Proceedings of the International Conference on Affective Computing & Intelligent Interaction (ACII 2019)*, September 2019. (**Oral**)

RELATED

COURSEWORK

Online Optimization/Learning, ML Theory, Large Scale Optimization for Machine Learning, Convex Optimization, Advanced Representation Learning for NLP, Advanced Algorithms, Knowledge Extraction and Reasoning, Dialogue Systems, Affective Computing

SKILLS	Languages: Python , C/C++, MATLAB, Ocaml, Java, HTML/CSS, PHP, SQL, JavaScript Technologies & API: PyTorch , Pandas, Docker, Scikit Learn, Hadoop, Spark Transferrable: Strategic Thinking, Collaboration, Public Speaking	
WORK EXPERIENCES	Google Research Mountain View, CA Student Researcher Oct 2023 – Present <ul style="list-style-type: none"> • Benchmarking and mitigating text-to-video/text-to-image generative models biases • Developing out-of-distribution detection safety measures for large vision-language models 	
	Lawrence Livermore National Lab Livermore, CA Research Intern [Host: Bhavya Kailkhura, Pin-Yu Chen] May 2023 – Aug 2023 <ul style="list-style-type: none"> • Designing instruction-tuning methods to defend jailbreaking attacks on Vision-Language Models (VLM) like GPT-4 • Evaluating new AirSim-generated context-aware benchmarks for zero-shot domain generalization of multi-modal models like CLIP, GLIP, GroundingDINO, etc. 	
	Computer Science Department, USC Los Angeles, CA Head Teaching Assistant Jan 2020 – Present <ul style="list-style-type: none"> • Machine Learning, Data Mining & Applied Natural Language Processing 	
	Lilt, Inc. San Francisco, CA Data Science Intern [Host: Geza Kovacs] May 2020 – Sep 2020 <ul style="list-style-type: none"> • Collaborated with 5 senior engineers on improving a robust personalized machine translation (MT) system with 2 algorithms • Developed a successful defense mechanism against noisy online inputs; 5 BLEU better than the baseline • Presented a visualization analysis tool in front of 10 senior researchers 	
	Signal Analysis and Interpretation Lab (SAIL), USC Link Los Angeles, CA Research Assistant Aug 2018 – Dec 2019 <ul style="list-style-type: none"> • Designed domain-specific feature extraction and Neural Network architectures for narrative quality assessment • Utilized statistical consistency measure for linguistic behavior • Developed a pipeline for Sentiment, Emotion, Cognitive state task of DARPA LORELEI project 	
	Institute for Creative Technologies Los Angeles, CA Researcher [Project: Conversation Quality Assessment] Jan 2017 – Dec 2017 <ul style="list-style-type: none"> • Trained Long Short Term Memory (LSTM) deep learning model and word embeddings for behavioral modeling based on 10k Fisher and alcoholism treatment data • Predicted new conversation and treatment session quality reaching 75% accuracy 	
	Illumina, Inc. San Diego, CA DevOps Applications Intern May 2017 – Aug 2017 <ul style="list-style-type: none"> • Built a machine learning Cron for analyzing jobs in the High-Performance Computing cluster to identify “destined to fail” jobs using Sci-kit learn, reaching 95% accuracy • Developed a deep learning Daemon that constantly loads new samples from database (Hive) to train a classification model using Mini-batch update technique with TensorFlow, achieving 78% accuracy • Maintained enterprise Atlassian Jira and Confluence for 7k employees 	
ACADEMIC EXPERIENCE	Reviewer , IEEE International Conference on Acoustics, Speech and Signal Processing 2022	
OTHER ACTIVITIES	<ul style="list-style-type: none"> • President of Taiwanese PhD Student Association • California Collegiate Salsa Competition Champion 2018 • Vice President of String Ensemble 	
INVITED TALK	<ul style="list-style-type: none"> • CSRMP gStudent Experience Panel, Google’s CS Research Mentorship Program, November 2023 • Google Perception Fairness Internal Talk, November 2023 	

HONORS & AWARDS	DATUMO Fellowship (\$50k)	2023
	USC WiSE Travel Grant * 2	2022, 2023
	Kaggle Silver Medal (top 4% out of 5,332 teams), Porto Seguro’s Safe Driver Prediction	2017
	Celebrating the Viterbi Algorithm Through Art	2017
	Honorary Member of Phi Tau Phi Scholastic Society	2015
	Excellent Study Group Award, NTHU	2015
	National Tsing Hua University International Exchange Scholarship	2014