

JIASI CHEN

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Electrical Engineering and Computer Science
University of Michigan, Ann Arbor
Ann Arbor, MI 48109

EXPERIENCE

University of Michigan, Ann Arbor

Associate Professor, Dept. of Electrical Engineering and Computer Science 2023-present

University of California, Riverside

Associate Professor, Dept. of Computer Science and Engineering 2021-2023

Assistant Professor, Dept. of Computer Science and Engineering 2015-21

KBR Wyle, NASA Ames Research Center

External Consultant 2020

AT&T Labs – Research

Intern, Networking & Services 2013

Mentors: Jeffrey Erman, Guangzhi Li, K.K. Ramakrishnan, Rakesh Sinha

NEC Labs America

Intern, Mobile Communications & Networking 2012

Mentors: Rajesh Mahindra, M. Amir Khojastepour, Sampath Rangarajan

EDUCATION

Princeton University 2015

Ph.D. in Electrical Engineering

Thesis: Optimizing video delivery on mobile networks

Advisor: Mung Chiang

M.A. in Electrical Engineering

Columbia University 2010

B.S. in Electrical Engineering, *magna cum laude*

HONORS and AWARDS

Adobe Data Science Research Award 2023

Topic: Cheaper and Query-aware Inference for Language Models: Optimal Language

Model Cascades by Modeling Future Rewards

Meta Faculty Research Award 2021

Topic: Location tampering in multi-user augmented reality: attacks and defenses

NSF CAREER Award 2020

Topic: Networked Multi-User Augmented Reality for Mobile Devices

IEEE INFOCOM Distinguished TPC Member 2019, 2021,

Based on peer ratings, reflecting the high quality of the reviews provided. 2023

Hellman Fellowship 2017
For promising Assistant Professors who exhibit potential for great distinction in their area of expertise.

UCR University Honors Faculty Mentor of the Year 2017
One of three awards given campus-wide for senior thesis advising.

TEACHING EXPERIENCE

University of Michigan, Ann Arbor

- **EECS 452: Digital signal processing laboratory** 2023
Senior/graduate design course on embedded systems.

University of California, Riverside:

- **CS135: Virtual reality** 2018 - 22
Technical elective for juniors and seniors with ~100 students per year.
- **CS179i: Project in computer networks** 2016-18
Advised group senior design projects in computer networking.
- **CS190: Apprentice teaching for undergraduates** 2021- 23
Founded a peer tutoring program to support lower-division CS classes and trained tutors on best practices.
- **CS204: Advanced computer networks** 2016 - 23
Graduate-level course with updated syllabus based on recent research.
- **CS260: Seminar in multimedia networking** 2017
Graduate-level seminar. Topics included video streaming, augmented and virtual reality, and Internet economics.

MENTORING EXPERIENCE

PhD: Zijian Huang, Yi-Zhen Tsai, Xuechen Zhang (with Samet Oymak)

PhD alumni: Kittipat Apicharttrisorn (with Srikanth Krishnamurthy, Nokia Bell Labs), Xukan Ran (Qualcomm R&D), Carter Slocum (Harvey Mudd College)

Master's: Shahryar Afzal (with K.K. Ramakrishnan), Daniel Handojo, Hui Yang, Chang Yuan

Undergraduate: Tandy Dang, Jingwen Huang, Japneet Kaur, Zheng Li, James Luo, Elijah Nicasio, Gopal Nookula, Timothy Oh, Emmilio Segovia, Steven Truong, David Zhang

PUBLICATIONS

Xuechen Zhang, Zheng Li, Samet Oymak, **Jiasi Chen** “Text-to-3D Generative AI on Mobile Devices: Measurements and Optimizations”, *ACM SIGCOMM Workshop on Emerging Multimedia Systems*, 2023.

Yi-Zhen Tsai, James Luo, Yunshu Wang, **Jiasi Chen**, “The World is Too Big to Download: 3D Model Retrieval for World-Scale Augmented Reality”, *ACM MMSys*, 2023. (best student paper award)

Yicheng Zhang, Carter Slocum, **Jiasi Chen**, Nael Abu-Ghazaleh, “It’s all in your head(set): Side channel attacks on augmented reality systems”, *USENIX Security*, 2023.

Carter Slocum, Yicheng Zhang, Nael Abu-Ghazaleh, **Jiasi Chen**, “Going through the motions: AR/VR

keylogging from user head motions”, *USENIX Security*, 2023.

Ching-Nam Hang, Yi-Zhen Tsai, Pei-Duo Yu, **Jiasi Chen**, Chee-Wei Tan, “Privacy-Enhancing Digital Contact Tracing with Machine Learning for Pandemic Response: A Comprehensive Review”, *Big Data and Cognitive Computing*, 2023.

Aditya Dhakal, Xukan Ran, Yunshu Wang, **Jiasi Chen**, K.K. Ramakrishnan, “SLAM-Share: Visual Simultaneous Localization and Mapping for Real-time Multi-user Augmented Reality”, *ACM CoNEXT*, 2022. (18% acceptance rate)

Kittipat Apicharttrisorn, **Jiasi Chen**, Vyas Sekar, Srikanth Krishnamurthy, “Breaking edge shackles: Infrastructure-free collaborative mobile augmented reality”, *ACM SenSys*, 2022. (25% acceptance rate)

Wangyu Choi, **Jiasi Chen**, Jongwong Yoon, “ABRaider: Multi-Phase Reinforcement Learning for Environment-Adaptive Video Streaming”, *IEEE ACCESS*, 2022.

Timothy Scargill, Shreya Hurli, **Jiasi Chen**, Maria Gorlatova, “Here To Stay: A Quantitative Comparison of Virtual Object Stability in Markerless Mobile AR,” *Workshop on Cyber-Physical Human System Design and Implementation* (at CPS-IoT week), 2022.

Yi-Zhen Tsai, **Jiasi Chen**, "Network-side 5G mmWave Channel Signatures for Pandemic Contact Tracing", *IEEE ICC*, 2022.

Mingchen Li, Xuechen Zhang, Christos Thrampoulidis, **Jiasi Chen**, Samet Oymak, "AutoBalance: Optimized Loss Functions for Imbalanced Data", *NeurIPS*, 2021. (26% acceptance rate)

Carter Slocum, Xukan Ran, **Jiasi Chen**, "RealityCheck: A Tool to Evaluate Spatial Inconsistency in Augmented Reality", *IEEE ISM*, 2021.

Carter Slocum, Jingwen Huang, **Jiasi Chen**, “VIA: Visibility-aware Web-based Virtual Reality”, *ACM Web3D*, 2021.

Hisham Alhulayyil, **Jiasi Chen**, Karthik Sundaresan, Srikanth Krishnamurthy, “Boosting Home WiFi Throughputs via Adaptive DAS Clustering of PLC Extenders” (invited), *IEEE MASS*, 2021.

Timothy James Scargill, Shreya Hurli, **Jiasi Chen**, Maria Gorlatova, “Will it Move?: Indoor Scene Characterization for Hologram Stability in Mobile AR” (demo), *ACM HotMobile*, 2021.

Moustafa Abdelbaky, **Jiasi Chen**, Alexander Fedin, Kenneth Freeman, Mohana Gurram, Abraham Ishihara, Carlee Joe-Wong, Christopher Knight, Kalmanje Krishnakumar, Isaias Reyes, Calvin Robinson, Peter Shannon, Sandeep Shetye, Luka Tomljenovic, William Van Dalsem, “DRF: A Software Architecture for a Data Marketplace to Support Advanced Air Mobility”, *AAAI Aviation Forum*, 2021.

Xukan Ran, Carter Slocum, Yi-Zhen Tsai, Kittipat Apicharttrisorn, Maria Gorlatova, **Jiasi Chen**, “Multi-User Augmented Reality with Communication Efficient and Spatially Consistent Virtual Objects”, *ACM CoNEXT*, 2020. (25% acceptance rate)

Kittipat Apicharttrisorn, Bharath Balasubramanian, **Jiasi Chen**, Rajarajan Sivaraj, Yi-Zhen Tsai, Rittwik Jana, Srikanth Krishnamurthy, Tuyen Tran, Yu Zhou, “Characterization of Multi-User Augmented Reality over Cellular Networks”, *IEEE SECON*, 2020. (best paper finalist, 28% acceptance rate)

Ha-Ryung Kim, **Jiasi Chen**, Jongwon Yoon, "Joint User Clustering and Beamforming in Non-Orthogonal Multiple Access Networks", *IEEE ACCESS*, 2020.

Yuan Zhao, Jiasi Chen, Samet Oymak, "On the Role of Dataset Quality and Heterogeneity in Model Confidence", *ICML Workshop on Uncertainty and Robustness in Deep Learning*, 2020.

Shahryar Afzal, **Jiasi Chen**, K.K. Ramakrishnan, "Viewing the 360-degree Future: Trade-Off Between User Field-of-View Prediction, Network Bandwidth, and Delay", *IEEE ICCCN*, 2020.

Hisham Alhulayyil, Kittipat Apicharttrisor, **Jiasi Chen**, Karthik Sundaresan, Samet Oymak and Srikanth Krishnamurthy, "WOLT: Auto-Configuration of Integrated Enterprise PLC-WiFi Networks", *IEEE ICDCS*, 2020. (18% acceptance rate)

Shengxin Liu, Carlee Joe-Wong, **Jiasi Chen**, Christopher Brinton, Chee Wei Tan, Liang Zheng, "Economic Viability of Virtual ISP", *IEEE Transactions on Networking*, 2020.

Ahmet Dermikaya, **Jiasi Chen**, Samet Oymak, "Exploring the Role of Loss Functions in Multiclass Classification", *IEEE CISS*, 2020.

Guoqiang Zhang, Yue Wu, Xu Han, Qian Gao, **Jiasi Chen**, "Exploiting the layer correlation to improve DASH scheduling with scalable video coding", *Computer Networks*, 2020.

Kittipat Apicharttrisor, Xukan Ran, **Jiasi Chen**, Srikanth Krishnamurthy, Amit Roy-Chowdhury "Frugal Following: Power Thrifty Object Detection and Tracking for Mobile Augmented Reality", *ACM SenSys*, 2019. (**best paper finalist**, 19% acceptance rate)

Xukan Ran, Carter Slocum, Maria Gorlatova, **Jiasi Chen**, "Communication-efficient Multi-User Mobile Augmented Reality", *ACM Workshop on Hot Topics in Networks (HotNets)*, 2019. (20% acceptance rate)

Jiasi Chen, Xukan Ran, "Deep Learning with Edge Computing: A Review" (invited), *Proceedings of the IEEE*, 2019. (impact factor: 10.7)

Samet Oymak, Mehrdad Madavi, **Jiasi Chen**, "Learning Feature Nonlinearities with Non-Convex Regularized Binned Regression", *IEEE ISIT*, 2019.

Jiasi Chen, Bharath Balasubramanian, Zhe Huang, "Liv(e)-ing on the Edge: User-Uploaded Live Streams Driven by "First-Mile" Edge Decisions", *IEEE EDGE*, 2019

Xukan Ran, Haoliang Chen, Xiaodan Zhu, Zhenming Liu, **Jiasi Chen**, "DeepDecision: A Mobile Deep Learning Framework", *IEEE INFOCOM*, 2018. (19% acceptance rate)

Shahryar Afzal, **Jiasi Chen**, K.K. Ramakrishnan, "Characterization of 360-degree videos," *SIGCOMM Workshop on Virtual Reality and Augmented Reality Network*, 2017.

Xukan Ran, Haoliang Chen, Zhenming Liu, **Jiasi Chen**, "Delivering deep learning to mobile devices via offloading," *SIGCOMM Workshop on Virtual Reality and Augmented Reality Network*, 2017.

Suzan Bayhan, Liang Zheng, **Jiasi Chen**, Mario Di Francesco, Jussi Kangasharju, Mung Chiang, "Improving Cellular Capacity with White Space Offloading," *Symposium on Modeling and Optimization*

in Mobile, Ad Hoc, and Wireless Networks (WiOpt), 2017.

Liang Zheng, **Jiasi Chen**, Carlee Joe-Wong, Chee Wei Tan, Mung Chiang, "An Economic Analysis of Wireless Network Infrastructure Sharing", *Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, 2017.

Kittipat Apicharttrisor, Ahmed Osama Fathy Atya, **Jiasi Chen**, Karthikeyan Sundaresan, and Srikanth V. Krishnamurthy, "Enhancing WiFi Throughput With PLC Extenders: A Measurement Study," *Passive and Active Measurement Conference*, 2017. (23% acceptance rate)

Liang Zheng, Carlee Joe-Wong, **Jiasi Chen**, Christopher G. Brinton, Chee Wei Tan, Mung Chiang, "Economic Viability of a Virtual ISP", *IEEE INFOCOM*, 2017. (21% acceptance rate)

Michael Wang, **Jiasi Chen**, Ehsan Aryafar, and Mung Chiang, "A Survey of Client-Controlled HetNets for 5G" (invited), *IEEE Access*, 2017.

Tao Lin, Hongjia Li, Haiyong Xie, **Jiasi Chen**, Huajun Cui, Guoqiang Zhang, Wei An, Yang Li, "Performance and Implications of RAN Caching in LTE Mobile Networks: a Real Traffic Analysis", *IEEE SECON*, 2016. (26% acceptance rate)

Jiasi Chen, Mung Chiang, Jeffrey Erman, Guangzhi Li, K.K. Ramakrishnan, Rakesh Sinha, "Fair and Optimal Resource Allocation for LTE Multicast (eMBMS): Group Partitioning and Dynamics," *IEEE INFOCOM*, 2015. (19% acceptance rate)

Xiaoli Wang, **Jiasi Chen**, Aveek Dutta, Mung Chiang, "Adaptive Video Streaming over Whitespace: SVC for 3-Tiered Spectrum Sharing," *IEEE INFOCOM*, 2015. (19% acceptance rate)

Jiasi Chen, Amitabh Ghosh, Mung Chiang, "Mechanisms for Quota-Aware Video Adaptation," book chapter: *Smart Data Pricing*, ed. S. Sen, C. Joe-Wong, S. Ha, M. Chiang, John Wiley, 2014.

Jiasi Chen, Rajesh Mahindra, M. Amir Khojastepour, Sampath Rangarajan, Mung Chiang, "Scheduling Framework for Adaptive Video Delivery over Cellular Networks," *ACM MobiCom*, 2013. (14% acceptance rate)

Jiasi Chen, Soumya Sen, David Dorsey, Mung Chiang, "A Framework for Energy-efficient Adaptive Jamming of Adversarial Communications," *CISS*, 2013.

Jiasi Chen, Amitabh Ghosh, Josphat Magutt, Mung Chiang, "QAVA: Quota-Aware Video Adaptation," *ACM CoNEXT*, 2012. (18% acceptance rate)

PATENTS

Bharath Balasubramanian, Zhe Huang, Jiasi Chen, "Live Streaming Server Selection", US Patent #11,330,045, 2022.

Rakesh Sinha, Jeffrey Erman, Guangzhi Li, Jiasi Chen, Kadangode K. Ramakrishnan, "Broadcast Services Platform and Methods for Use Therewith," US Patent #10,447,616, 2019.

Jiasi Chen, Amitabh Ghosh, Mung Chiang, "Quota-Aware Video Adaptation," US Patent #9,544,623, 2017.

Rajesh Mahindra, M. Amir Khojastepour, Sampath Rangarajan, Jiasi Chen, "Scheduling Framework for

Adaptive Video Delivery over Cellular Networks,” US Patent #9,338,693, 2016.

ACADEMIC SERVICE

Chair:

ACM/IEEE Symposium on Edge Computing (TPC co-chair)	2023
ACM CoNEXT Student Workshop	2019
IEEE INFOCOM CNERT Workshop	2019
ACM SIGCOMM NEAT Workshop	2018

Technical Program Committees:

ACM SIGCOMM	2022, 2024
ACM Multimedia	2019-23
ACM MMSys	2019
ACM NOSSDAV	2022
ACM SIGCOMM Workshop on Virtual and Augmented Reality Network	2017-18
ACM SIGCOMM Workshop on Network Meets AI & ML	2020
ACM SIGCOMM Education Workshop	2020
IEEE INFOCOM	2017-
IEEE ICNP	2016-
IEEE ICDCS	2022
IEEE SECON	2018
IEEE WiOpt	2019-
IEEE Sarnoff Symposium	2019
IEEE CNSM HiPNET Workshop	2018-19
IEEE ICNP NIPAA Workshop	2020
The Networking Channel (online seminar series)	2021

Organizing Committees: ACM CoNEXT’16 (local arrangements), ACM/IEEE Symposium on Edge Computing’16 (demo/poster), ACM SIGCOMM’17 (registration), IEEE ICNP’21 (publicity), ACM MobiCom’21 (travel grants), ACM MobiSys’22 (posters)

Journal Reviewer: Proceedings of the IEEE, IEEE Trans. Networking, IEEE Trans. Mobile Computing, IEEE Trans. Parallel and Distributed Systems, IEEE Trans. Communications, IEEE Trans. Wireless Communications, IEEE Communications Mag., IEEE Journal on Selected Areas in Communications

Journal Editor: IEEE Network special issue on “Bridging the Gap between Industry and Academia for Networking Research” (guest editor)

FUNDING

- Adobe Data Science Research Award, “Cheaper and Query-aware Inference for Language Models: Optimal Language Model Cascades by Modeling Future Rewards”, \$50k (co-PI)
- NSF CSR: Medium: Adaptive Environmental Awareness for Collaborative Augmented Reality, \$1.2M, 2023-27 (Michigan PI)
- US Army, “Learning Human-Robot Interaction Through AR/VR Technologies” (equipment grant), \$360k, 2022-23 (co-PI)
- Meta Faculty Research Award, “Location tampering in multi-user augmented reality: attacks and defenses”, \$75k, 2021 (PI)
- AT&T Labs Research gift, “Leveraging ORAN Control for Augmented/Virtual Reality”, \$20k, 2021 (PI)
- Center for Inclusive Computing Best Practices Grant, \$600k, 2021-2023 (co-PI)

- NSF CAREER: Networked Multi-User Augmented Reality for Mobile Devices, \$500k, 2020-26 (PI)
- National Center for Women & Information Technology Academic Alliance Seed Fund, \$10k, 2020 (co-PI)
- U.S. Department of Education, Graduate Assistance in Areas of National Need, \$895k, 2018-21 (co-PI)
- NSF CNS NeTS: Small: Support for Interactive AR/VR Video: Learning and Optimizing at the Network Edge, \$250k, 2018-22 (PI)
- NSF CNS NeTS: Small: Realizing Integrated High throughput PLC/VLC networks, \$400k, 2015-18 (co-PI)
- UCR Collaborative Seed Grant, \$10k, 2018 (co-PI)

BROADENING PARTICIPATION ACTIVITIES

Mediation Training completed at the Social Justice Mediation Institute	2022
Equity Advisor for UCR's Bourns College of Engineering	2021 - 23
Faculty Advisor of UCR's ACM-Women chapter	2017 - 21
N2Women Mentor at ACM SIGCOMM	2020
Judge for UCR CSE's Grace Hopper Conference scholarships	2018, 2019
Judge and VR workshop organizer at various UCR hackathons	2017 - 23
Speaker/Mentor at Riverside Unified School District's STEM workshop for girls	2018, 2019
Speaker at CS4All and IEEE TryEngineering code camps for high school students	2018

INVITED TALKS and PANELS

Security and Privacy for AR/VR Systems: Multi-user platforms and integration with ILLIXR UIUC Illinois Extended Reality Testbed (ILLIXR) seminar	2022
Side channel and location teleportation attacks for AR/VR Meta Hacktober	2022
CAREER Awardee Talk NSF CISE CAREER Workshop	2022
NeTS CAREER Advice Panel NSF CISE CAREER Workshop	2021
Supporting Experiments across increasingly Specialized Testbeds and Instruments Panel IEEE INFOCOM CNERT Workshop	2021
Networked Augmented and Virtual Reality for Mobile Devices UC Merced ECE Speaker Series	2021
Networked Augmented and Virtual Reality for Mobile Devices Rice University ECE Distinguished Speaker Series https://www.youtube.com/watch?v=AZceOzFCMqc	2021
Communication-efficient Multi-User Mobile Augmented Reality ACM HotNets Workshop	2019

Mobile AR/VR with Edge-based Deep Learning Keynote Speaker at IEEE CNSM	2019
ML/AI as Enabler for Network Engineering and Operation Panel IEEE CNSM	2019
Mobile AR/VR with Edge-based Deep Learning Dalhousie University	2019
Mobile AR/VR with Edge-based Deep Learning UCR Data Science seminar series	2019
System Challenges of Mobile AR and VR Princeton University EDGE10 Workshop	2019
Research on Networked Augmented and Virtual Reality UCR Homecoming Parents' Day	2019
Measuring Communication Latency for Persistent AR COSMOS Experimenter's Workshop, Rutgers University	2018
Research in Augmented and Virtual Reality Riverside Unified School District's "Inspire Her Mind" STEM Workshop	2018
Research on Networked Multimedia UCR "Living the Promise" alumni speaker series, Google, Mountain View CA	2018
Research in Multimedia Networks UCR ACM-Women general meeting	2018
Optimizing Video Delivery over Mobile Networks UC Irvine NetSys/CS seminar series	2016
Video to Go: Optimizing Video Delivery over Mobile Networks AT&T Labs Research	2015

MISCELLANEOUS

Associate Diploma (ARCT) in piano performance from the Royal Conservatory of Music
National Finalist in Canadian Physics Olympiad (top 20)