

Dongyao Chen

No. 800 Dongchuan Road, Shanghai, China, 200240

✉ chendy@sjtu.edu.cn · 🌐 <https://chendy.tech>

EDUCATION

University of Michigan

Ph. D. candidate in Computer Science and Engineering

Thesis: Seamless Interactions Between Humans and Mobility Systems

Ann Arbor, MI, USA

Jul. 2015 - 2020

University of Michigan

M.S. in Electrical Engineering

Ann Arbor, MI, USA

Sept. 2013 - Jul. 2015

Shanghai Jiao Tong University

B.S. in Electrical Engineering

Shanghai, China

Sept. 2009 - Jul. 2013

EMPLOYMENT

Shanghai Jiao Tong University

Assistant Professor

School of Electronic Information and Electrical Engineering (SEIEE)

Shanghai, China

Sept. 2020 - Present

Hewlett Packard Labs

Research Intern

Networking and Mobility Team

Palo Alto, CA, USA

May. 2016 – Sept. 2016

PUBLICATIONS

(Underlined authors are my direct advisees, '*' denotes co-primary authors)

- Polaris: Accurate, Vision-free Fiducials for Mobile Robots with Magnetic Constellation
Jike Wang, Yasha Irvantchi, Alanson Sample, Kang G. Shin, Xinbing Wang, **Dongyao Chen**

The ACM International Conference on Mobile Computing and Networking (ACM MobiCom), 2024

- MagDot: Drift-free, Wearable Joint Angle Tracking at Low Cost

Dongyao Chen, Qing Luo, Xiaomeng Chen, Xinbing Wang, and Chenghu Zhou

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp), December, 2023 (To appear in UbiComp 2024)

- METRO: Magnetic Road Markings for All-weather, Smart Roads

Jike Wang, Shanmu Wang, Yasha Irvantchi, Mingke Wang, Alanson Sample, Kang G. Shin, Xinbing Wang, Chenghu Zhou, and **Dongyao Chen**

The ACM International Conference on Mobile Computing and Networking (ACM SenSys), 2023

- Guess Which Car Type I Am Driving: Information Leak via Driving Apps

🏆 *Best Paper Award*

Dongyao Chen, Mert D. Pesé, and Kang G. Shin

The Inaugural Symposium on Vehicle Security & Privacy (VehicleSec), 2023

- Automatic Calibration of Magnetic Tracking

Mingke Wang*, Qing Luo*, Yasha Iravantchi, Xiaomeng Chen, Alanson Sample, Kang G. Shin, Xiaohua Tian, Xinbing Wang, and **Dongyao Chen**

The ACM International Conference on Mobile Computing and Networking (ACM MobiCom), 2022

- Enabling Software-defined PHY for Backscatter Networks

Fengyuan Zhu, Mingwei Ouyang, Luwei Feng, Yaoyu Liu, Xiaohua Tian, Meng Jin, **Dongyao Chen**, and Xinbing Wang

ACM International Conference on Mobile Systems, Applications and Services (ACM MobiSys), 2022

- DETROIT: Data Collection, Translation and Sharing for Rapid Vehicular App Development

Mert D. Pesé, **Dongyao Chen**, C. Andrés Campos, Alice Ying, Troy Stacer, and Kang G. Shin

IEEE International Conference on Sensing, Communication and Networking (SECON), 2022

- Wearable, untethered hands tracking with passive magnets

Dongyao Chen, Mingke Wang, Chenxi He, Qing Luo, Yasha Iravantchi, Alanson Sample, Kang G. Shin, and Xinbing Wang

The ACM International Conference on Mobile Computing and Networking (ACM MobiCom), 2021

- Authenticating Drivers Using Automotive Batteries

Liang He, Yuanchao Shu, Youngmoon Lee, **Dongyao Chen**, and Kang G. Shin

ACM International Conference on Ubiquitous Computing (ACM UbiComp), 2020

- LibreCAN: Automated CAN Message Translator

Mert D. Pesé, Troy Stacer, C. Andrés Campos, Eric Newberry, **Dongyao Chen**, and Kang G. Shin

ACM Conference on Computer and Communications Security (CCS), 2019

- Exploiting Mobile Kinetic Data for Transportation Apps

Dongyao Chen and Kang G. Shin

In Proceedings The 28th ACM International Conference on Information and Knowledge Management (CIKM), 2019

- TurnsMap: Enhancing Traffic Safety with Crowdsensing and Deep Learning

Dongyao Chen and Kang G. Shin

ACM International Conference on Ubiquitous Computing (ACM UbiComp), 2019

- Tracking and Locating Bluetooth Beacons with Smartphones

Dongyao Chen, Kang G. Shin, Yurong Jiang, Kyu-Han Kim

ACM Conference on Emerging Network Experiment and Technology (ACM CoNEXT), 2017

- Invisible Sensing of Vehicle Steering with Smartphones

Dongyao Chen, Kyong-Tak Cho, Sihui Han, Zhizhuo Jin, and Kang G. Shin

ACM International Conference on Mobile Systems, Applications and Services (ACM MobiSys), 2015

- Vulnerability and Protection of CSI in Multiuser MIMO Networks

Yu-Chih Tung, Sihui Han, **Dongyao Chen**, and Kang G. Shin

ACM Conference on Computer and Communications Security (CCS), 2014

GRANTS

- National Science Foundation of China (NSFC), **PI**
 - Title: Research on Accurate Motion Capture with Magnetic Sensing.
- National Science Foundation of China (NSFC), **PI** 2022–2024
 - Title: Research on the Essential Technologies in Ubiquitous Driving Behavior Recognition System with a Sensing-Transmission-Computing Cohesive Approach.
- Joint Seed Grant Fund Shanghai Jiao Tong University and Cornell University, **PI**, with Prof. Cheng Zhang (Cornell University) 2023–2024
 - Title: Recognizing Fine-grained Hand-Face Touching Behaviors using Minimally-obtrusive Wearables with Magnetic Sensing

INVITED TALKS

- “Enabling Magnetoreception for Cyber-Physical Systems”
 - Singapore Management University (SMU), Singapore Aug. 2024
 - Nanyang Technological University (NTU), Singapore Aug. 2024
 - National University of Singapore (NUS), Singapore Aug. 2024
- “Integrating Magnetic Sensing in Health Care Applications”
 - Microsoft Research Asia (MSRA Shanghai), China Jul. 2024
- “Capturing Fine-grained Motions with Magnetic Sensing”
 - University of California San Diego (UCSD), USA Mar. 2024

- “Towards High-accuracy, Cost-efficient Motion Sensing”
 - Tongji University, China *Mar. 2024*
- “Millimeter-scale Movement Tracking with Magnetic Sensing”
 - Microsoft Research Asia (MSRA Shanghai), China *Apr. 2023*

TEACHING

- **CS1501: Programming Methodology**
 - 2021 Fall, 2022 Fall, 2023 Fall, 2024 Fall
 - Class capacity 88 – 96
 - CS1501 is the introductory course to computer science and programming at SJTU. Attendants are first-year college students. Most attendees have limited or no programming experience.
 - Received an A grade evaluation, 2022 Fall. Evaluated by 86 students.
- **CS7351: Principles and Design of Sensing Systems**
 - 2022 Fall, 2023 Fall
 - Received an A grade evaluation, 2022 Fall. Evaluated by 25 students.
- **CS106: Programming Practice**
 - 2022 Summer, 2023 Summer

AWARDS

- Best Paper Award, VehicleSec *2023*
- Rackham Graduate School Travel Grant. *2017, 2015*
- CoNEXT 2017 Travel Grant. *2017*
- MobiSys 2015 Travel Grant. *2015*
- National Scholarship, 2% of all students,, SJTU. *2010*

PROFESSIONAL SERVICES

- Technical program committee
 - ACM MobiCom (2022, 2023, 2024, 2025)
 - ACM MobiSys (2023, 2024)
 - VehicleSec (2022, 2023)
- Public co-chair
 - ACM MobiHoc (2021)
- Reviewer
 - ACM UbiComp (2016, 2023)
 - ICCPS (2018)
 - IEEE TMC (2016, 2018),

PATENTS

- Inferring Left-Turn Information from Mobile Crowdsensing Issued, *Jan. 2024*
 - Inventors: Kang G. Shin, **Dongyao Chen**
 - Patent serial No. US11879744B2
- Fingerprinting Driver with Mobile IMU Sensors Issued, *Nov. 2021*
 - Inventors: **Dongyao Chen**, Kyong-Tak Cho and Kang G. Shin
 - Patent serial No. US11180154B2
- Bluetooth Beacon Locator Issued, *Nov. 2018*
 - Inventors: **Dongyao Chen**, Yurong Jiang and Kyu-Han Kim
 - Patent serial No. US20180317044A1
- Detecting Vehicle Maneuvers With Mobile Phones Issued, *Oct. 2016*
 - Inventors: **Dongyao Chen**, and Kang G. Shin
 - Patent serial No. US20160311442A1

STUDENTS

- Ph. D. students
 - Jike Wang, 2021 - Present
 - Zhenyu Chen, 2022 - Present
 - Siyuan Wang, 2023 - Present
 - Wangwei Shen, 2024 - Present
- M. S. students
 - Qing Luo, 2020 - 2023
 - Xiaomeng Chen, 2023 - Present
 - Shuoxin Liu, 2023 - Present
 - Haoyuan Zeng, 2024 - Present
- B. S. students
 - Mingke Wang, undergraduate thesis, 2020 - 2022, now Ph. D. student at University of Michigan, Ann Arbor
 - Chenxi He, research intern, 2020 - 2022, now M. S. student at Carnegie Mellon University
 - Xueshen Liu, research intern, 2021 - 2022, now Ph. D. student at the University of Michigan, Ann Arbor
 - Tong Jin, research intern, 2021 - 2022, now M. S. student at Carnegie Mellon University
 - Jingyan Wang, research intern, 2021 - 2022
 - Tao Lu, research intern, 2021 - 2022, now B. S. student at the University of Michigan, Ann Arbor
 - Jiaxiang Chen, research intern, 2022 - 2024, now M. S. student at Shanghai Jiao Tong University
 - Shanmu Wang, research intern, 2022 - 2023, now M. S. student at UCLA