

Emerson Sie

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RESEARCH INTERESTS

Wireless Systems, Signal Processing, Robotics, Embedded Systems



EDUCATION

2019 – Present	University of Illinois Urbana-Champaign Doctor of Philosophy, Electrical & Computer Engineering	Urbana, IL, USA
2015 – 2019	University of Illinois Urbana-Champaign B.S. Computer Engineering with Highest Honors	Urbana, IL, USA GPA: 3.97/4.00

EXPERIENCE

08/2021 – Present	University of Illinois Urbana-Champaign Graduate Research Assistant, Department of Computer Science	Urbana, IL, USA
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PUBLICATIONS

- MobiCom 2023 [1] [BatMobility: Towards Flying Without Seeing for Autonomous Drones](#)
Emerson Sie, Zikun Liu, and Deepak Vasisht
Acceptance Rate: 24.4%, 92 out of 377
[Website](#) / [arXiv](#) / [Code](#) / [Data](#) / [Slides](#)
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- MobiCom 2023 [2] [Magnetic Backscatter for In-Body Communication and Localization](#)
Bill Tao, **Emerson Sie**, Jayanth Shenoy, and Deepak Vasisht
Acceptance Rate: 24.4%, 92 out of 377
[Code](#) / [Data](#) / [Slides](#)
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- NSDI 2023 [3] [Exploring Practical Vulnerabilities of Machine Learning-based Wireless Systems](#)
Zikun Liu, Changming Xu, **Emerson Sie**, Gagandeep Singh, and Deepak Vasisht
Acceptance Rate: 18.4%, 50 out of 272
[PDF](#) / [Talk](#)
- ICRA 2022 [4] [RF-Annotate: Automatic RF-Supervised Image Annotation of Common Objects in Context](#)
Emerson Sie and Deepak Vasisht
[arXiv](#) / [Slides](#)

AWARDS AND HONORS

2024	Qualcomm Innovation Fellowship Finalist	Qualcomm, San Diego
2023	Mavis Future Faculty Fellowship Distinction awarded to students planning careers in academia (\$2000).	College of Engineering, UIUC
2023	Rambus Computer Engineering Fellowship Awarded for outstanding research in computer engineering (\$5000).	Dept. of ECE, UIUC
2019	Provisional Admission to Ph.D. Program	Dept. of ECE, UIUC
2019	Highest Honors at Graduation	Dept. of ECE, UIUC
2015 – 2019	Dean's List	College of Engineering, UIUC

CONTRIBUTED OPEN-SOURCE ARTIFACTS

- BatMobility [1]  [xwr_raw_ros](#)
ROS node for interfacing with raw ADC I/Q samples for TI mmWave radars.
- BatMobility [1]  [batmobility_ae](#)
PyTorch implementation of Doppler flow module from BatMobility.
- RAFA [3]  [nexmon_csi_gui](#)
GUI for real-time visualization of CSI data from Nexmon devices.

TEACHING

- Co-Instructor **UIUC CS 598 WN: Wireless Networking Seminar** Spring 2023
Co-organized a seminar to discuss latest trends in wireless systems research.
- Teaching Asst. **UIUC CS 374: Algorithms & Models of Computation** Fall 2019 – Spring 2021
Taught core algorithms class for CS/CE undergraduates at UIUC.

INVITED PRESENTATIONS

- Research Talk **IBM Research** 08/2023
BatMobility: Towards Flying Without Seeing for Autonomous Drones
- Conference Talk **MobiCom 2023** 08/2023
BatMobility: Towards Flying Without Seeing for Autonomous Drones
- Outreach **CS Research Open House** 03/2023
Kenwood Elementary School, Urbana, IL
- Conference Talk **ICRA 2022** 05/2022
RF-Annotate: Automatic RF-Supervised Image Annotation of Common Objects in Context

PRESS COVERAGE

- RAFA [3] **CS Researchers Highlight Vulnerabilities in AI-powered Wireless Networks** 08/2023
Covered by: [CS News](#)

MENTORSHIP

- M.S. Student, UIUC **Aganze Mihigo** 05/2023 - 08/2023
- Undergrad, Tsinghua University **Jida Zhang** 05/2023 - 08/2023
- Undergrad, Peking University **Heyu Guo** 05/2022 - 08/2022
- Undergrad, UIUC **Wei Shen** 01/2022 - 05/2022

ACADEMIC SERVICES

- Conference Reviewing **IEEE ICRA 2022**
- Artifact Evaluation Committee **ACM MobiCom 2023**
- Journal Reviewer **ACM IMWUT 2023**