



Zerina Kapetanovic

Assistant Professor of Electrical Engineering and, by courtesy, of Computer Science and of Geophysics

CONTACT INFORMATION

- **Administrative Contact**

Douglas Chaffee

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Bio

BIO

Zerina Kapetanovic is an Assistant Professor in the Department of Electrical Engineering at Stanford University working in the area of low-power wireless communication, sensing, and Internet of Things (IoT) systems. Prior to starting at Stanford, Kapetanovic was a postdoctoral researcher at Microsoft Research in the Networking Research Group and Research for Industry Group.

Kapetanovic's research has been recognized by the Yang Research Award, the Distinguished Dissertation Award from the University of Washington. She also received the Microsoft Research Distinguished Dissertation Grant and was selected to attend the 2020 UC Berkeley Rising Stars in EECS Workshop. Kapetanovic completed her PhD in Electrical Engineering from the University of Washington in 2022.

ACADEMIC APPOINTMENTS

- Assistant Professor, Electrical Engineering
- Assistant Professor (By courtesy), Computer Science
- Assistant Professor (By courtesy), Geophysics
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance

HONORS AND AWARDS

- Gabilan Fellow, Stanford University (2023)
- Terman Faculty Fellow, Stanford University (2023)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- PhD, University of Washington , Electrical Engineering (2022)

LINKS

- S4 Lab Website: <https://kapetanovic.sites.stanford.edu>
- Personal Website: <https://www.zerinakapetanovic.com>

Teaching

COURSES

2025-26

- Introduction to Embedded Systems: EE 186 (Aut)
- Introduction to Internet of Things: EE 284A (Spr)
- Wireless and Mobile Sensing Systems: EE 392D (Win)

2024-25

- Wireless Sensing Systems: EE 392D (Win)

2023-24

- Digital System Design: EE 108 (Win)
- Wireless Sensing Systems: EE 392D (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Brandon D'Agostino, Cassandra Huff, Yujia Yuan

Orals Evaluator

Andrew Bartolo

Doctoral Dissertation Advisor (AC)

Geneva Ecola, Jasmin Falconer, Bill Yen, Jida Zhang

Master's Program Advisor

Luke Allard, Nimalan Anbhuarasan, Arun Chhetri, Molly Miller, Ben Nguyen

Doctoral (Program)

Chae Young Lee, Bill Yen, Jida Zhang

Publications

PUBLICATIONS

- **Wireless Johnson Noise Thermometry for Passive Temperature Sensing** *IEEE JOURNAL OF MICROWAVES*
Falconer, J., Ecola, G., Kapetanovic, Z.
2025
- **SARLink: Satellite Backscatter Connectivity using Synthetic Aperture Radar**
Ecola, G., Yen, B., Morgado, A., Priyantha, B., Chandra, R., Kapetanovic, Z., ACM
ASSOC COMPUTING MACHINERY.2025: 398-410
- **Bringing Edge Intelligence to Wildlife Camera Traps with Hyperdimensional Computing**
Zhang, J., Jacques, T., Chen, J., Kapetanovic, Z., ACM
ASSOC COMPUTING MACHINERY.2025: 729-734

- **HyperCam: Low-Power Onboard Computer Vision for IoT Cameras**
Lee, C., Yi, P., Fite, M., Rao, T., Achour, S., Kapetanovic, Z., ACM
ASSOC COMPUTING MACHINERY.2025: 529-542
- **Carrier-Free RFID: Using Modulated Noise Communication to Read UHF RFID Tags** *IEEE JOURNAL OF RADIO FREQUENCY IDENTIFICATION*
Garman, S., Saffari, A., Kobuchi, D., Stotland, D., Smith, J. R., Kapetanovic, Z.
2024; 8: 196-205
- **Modulated Noise Communication: Reading UHF RFID tags without a carrier**
Garman, S., Saffari, A., Kobuchi, D., Smith, J. R., Kapetanovic, Z., IEEE
IEEE.2023: 13-18
- **Cosmic Backscatter: New Ways to Communicate via Modulated Noise**
Kapetanovic, Z., Garman, S., Stotland, D., Smith, J. R., ACM
ASSOC COMPUTING MACHINERY.2023: 165-171
- **Communication by means of modulated Johnson noise** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kapetanovic, Z., Morales, M., Smith, J. R.
2022; 119 (49): e2201337119
- **Whisper: IoT in the TV White Space Spectrum**
Chakraborty, T., Shi, H., Kapetanovic, Z., Priyantha, B., Vasisht, D., Vu, B., Pandit, P., Pillai, P., Chabria, Y., Nelson, A., Daum, M., Chandra, R., USENIX ASSOC
USENIX ASSOC.2022: 401-417
- **Democratizing Data-Driven Agriculture Using Affordable Hardware** *IEEE MICRO*
Chandra, R., Swaminathan, M., Chakraborty, T., Ding, J., Kapetanovic, Z., Kumar, P., Vasisht, D.
2022; 42 (1): 69-77
- **Low-Cost Aerial Imaging for Small Holder Farmers**
Jain, A., Kapetanovic, Z., Kumar, A., Swamy, V., Patil, R., Vasisht, D., Sharma, R., Swaminathan, M., Chandra, R., Badam, A., Ranade, G., Sinha, S., Nambi, et al
ASSOC COMPUTING MACHINERY.2019: 41-51
- **Wireless Quantization Index Modulation: Enabling Communication Through Existing Signals**
Kapetanovic, Z., Talla, V., Parks, A., Qian, J., Smith, J. R., IEEE
IEEE.2018
- **EXPERIENCES DEPLOYING AN ALWAYS-ON FARM NETWORK** *GETMOBILE-MOBILE COMPUTING & COMMUNICATIONS REVIEW*
Kapetanovic, Z., Vasisht, D., Won, J., Chandra, R., Kimball, M.
2017; 21 (2): 16-21
- **FarmBeats: An IoT Platform for Data-Driven Agriculture**
Vasisht, D., Kapetanovic, Z., Won, J., Jin, X., Chandra, R., Kapoor, A., Sinha, S. N., Sudarshan, M., Stratman, S., USENIX Assoc
USENIX ASSOC.2017: 515-529
- **WISPCam: An RF-Powered Smart Camera for Machine Vision Applications**
Naderiparizi, S., Kapetanovic, Z., Smith, J. R., ACM
ASSOC COMPUTING MACHINERY.2016: 19-22
- **WISPCam: A Battery-Free RFID Camera**
Naderiparizi, S., Parks, A. N., Kapetanovic, Z., Ransford, B., Smith, J. R., IEEE
IEEE.2015: 166-173