

# Stanford

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## Zerina Kapetanovic

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

### CONTACT INFORMATION

- **Administrative Contact**

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### Bio

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#### 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

#### HONORS AND AWARDS

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

#### 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

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### COURSES

#### 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 Advisor (AC)

Geneva Ecola, Bill Yen

#### Doctoral (Program)

Chae Young Lee, Bill Yen, Jida Zhang

## Publications

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### PUBLICATIONS

- **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
- **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
- **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
- **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

- **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