# Hailan Zhang Shanbhag

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**Area of Interest:** Wireless sensing and communications, environmentalism

## Education

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| École polytechnique fédérale de Lausanne | January 2023 – *present* |
| *Ph.D., Computer and Communication Sciences* | |
| Advisor: Haitham Hassanieh | |

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| University of Illinois at Urbana-Champaign | August 2021 – December 2022 |
| *Master of Science, Electrical and Computer Engineering* | GPA: 4.0./4.0 |
| Advisor: Haitham Hassanieh | |

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|---|---|
| University of Illinois at Urbana-Champaign | August 2017 – May 2021 |
| *Bachelor of Science, Computer Engineering* | GPA: 3.8./4.0 |

## Skills

Languages: Python, MATLAB, C/C++, Verilog/SystemVerilog, x86
Software/Frameworks: Eagle, KiCad, mmWave Studio, CUDA
Spoken Languages: English, Mandarin Chinese

## Publications

**[MobiSys '23]** Hailan Shanbhag*, Sohrab Madani*, Akhil Isanaka, Deepak Nair, Saurabh Gupta, Haitham Hassanieh. "Contactless Material Identification with Millimeter Wave Vibrometry" . *In ACM International Conference on Mobile Systems, Applications, and Services.*

## Research Experience

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| Senior Research Project & Thesis | August 2020 – May 2021 |
| *UIUC, Prof. Haitham Hassanieh* | |

- Calibrated four 60 GHz Qualcomm phased array antennas to construct a 12x12 MIMO array for both a transmitter and receiver *(hardware acquired from the M-Cube project of UCSD)*.
- Measured beam patterns of the transmitter and receiver radios and prepared the hardware for future applications.

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| Undergraduate Research Assistant | May 2018 – May 2019 |
| *UIUC, Prof. Viktor Gruev* | |

- Designed and fabricated a PCB for a Hamamatsu CMOS area image sensor realizing low-noise multi-spectral imaging for image-guided surgery and underwater polarization imaging.

- Began programming XEM7310 OpalKelly FPGA in Verilog to communicate with and process LVDS pixel data received from the image sensor.
- Communicated to the FPGA using OpalKelly's FrontPanel C++ API to interface through a PC.

**Honors & Awards**

Promise of Excellence Fellowship                                 August 2021 – May 2022
TI Women STEM Stars Scholarship                             August 2017 – May 2021

**Relevant Coursework**

Random Processes, Signal Processing, Digital Communications, Wireless and Communication Networks, Machine Learning

**Internships & Activities**

Silicon Verification Intern                                     June 2019 – August 2019
 *Sunnyvale, CA, Microsoft*
- Enhanced a UVM based verification IP by providing support for OCP VIPs.
- Created a translation layer from the AXI protocol to the OCP protocol, which was integrated into an inhouse verification IP.
- Integrated part of the translation layer via fully synthesizable code to reuse an inhouse AXI slave.