Xiaoxue Zhang

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Jack Baskin School of Engineering, University of California Santa Cruz http://users.soe.ucsc.edu/~zxx97

Education

University of California, Santa Cruz, USA

Ph.D., Computer Engineering Sep, 2019 - Now

Advisor: Prof. Chen Qian

University of Science and Technology of China (USTC), China July, 2019

B.E., Computer Science and Technology

Thesis: *Design and implementation of coding and modulation for backscatter communication with high throughput*

Advisor: Prof. Panlong Yang

Field of Interest

Blockchain; Network Routing; Internet of Things; Backscatter communication;

Teaching Experiences

University of California, Santa Cruz

Teaching Assistant

Introduction to Computer Networks (CSE 150) FALL, 2019

Introduction to Analysis of Algorithms (CSE 102) FALL, 2020

Introduction to Analysis of Algorithms (CSE 102) WINTER, 2021

Research Experiences

University of California, Santa Cruz Dec, 2019-Present

Scalable Decentralized Routing for Blockchain Payment Networks

- Designed a set of greedy routing protocols for payment channel networks that satisfies the scalability and decentralized requirements and can be used for massive-scale networks.

PI: Prof. Chen Qian

University of Science and Technology of China

PowerBack: Enabling WiFi Backscatter in the Wild Jan, 2019-July, 2019

- Designed an adaptive Reed-Solomon coded backscatter system to protect the data transmission against the intermittent nature of the excitation signals in the ambient backscatter system and to overcome low throughput in the backscatter communication system using WiFi signal due to the dynamic channel idle period.

PI: Prof. Xiangyang Li, Prof. Panlong Yang

Coded-Backscatter Multiple Access May, 2018 - Jan, 2019

- Proposed a coded-backscatter multiplexing access scheme in order to meet the loose coupling and high capacity requirements of deploying backscatter communication in dense and heterogeneous environments.

PI: Prof. Xiangyang Li, Prof. Panlong Yang

Measurement of Property of OFDM Backscattering Feb, 2018 - May, 2018

- Investigated the spatial-frequency property of the OFDM backscatter.
- Took the distance and the angle into account in different frequency bands.

PI: Prof. Panlong Yang

Publications

1. Xiaoxue Zhang, Shouqian Shi, and Chen Qian. "Scalable Decentralized Routing for Blockchain Payment Networks." In FAB, 2020

2. Nanhuan Mi, Xiaoxue Zhang, Xin He, Jie Xiong, Mingjun Xiao, Xiang-Yang Li, and Panlong Yang. "CBMA: Coded-Backscatter Multiple Access." In 2019 39th International Conference on Distributed Computing Systems (ICDCS), pp. 799-809. IEEE, 2019

3. Xiaoxue Zhang, Nanhuan Mi, Xin He, and Panlong Yang. "On Measurement of the Spatio-Frequency Property of OFDM Backscattering." In 2018 4th International Conference on Big Data Computing and Communications (BIGCOM), pp. 17-21. IEEE, 2018.

Software Skills

- Programming: Java, C, C++, Python, Assembly
- Databases: SQL, MySQL
- Web: JavaScript, CSS, HTML
- Other: MATLAB, LaTeX, Verilog, Shell, Origin, LabVIEW, Libero

Relevant Coursework

Core Courses: Operating System, Stochastic Processes, Analog and Digital Circuits, Computer Networks, Foundations of Algorithms, Data Structures, Computer Organization, Computer Architecture, Introduction to Information Security, Parallel Computing, Software Engineering, Fundamental to Artificial Intelligence