Zhenzhou (Tom) Qi

Cell: 732-322-2498 · Email: zhenzhou.qi@duke.edu

534 Research Dr, Wilkinson Building 427, Durham, NC 27705

www.linkedin.com/in/ZHENZHOU-QI

Country of Origin & Country of Residence: China

RESEARCH INTEREST

Digital signal processing, Wireless networks with a focus on 5G, millimeter-wave communications, massive MIMO, and edge cloud computing, Embedded systems and Internet-of-Things (IoT)

EDUCATION

Duke University, Durham, NC – Ph.D. in Electrical and Computer Engineering   *AUG 2021 – Present*
- Advisor: Prof. Tingjun Chen
- GPA: 3.85/4.00

Cornell University, Ithaca, NY – M.Eng. in Electrical and Computer Engineering   *SEP 2020 – MAY 2021*
- GPA: 3.97/4.00

Rutgers University, New Brunswick, NJ – B.S. in Electrical and Computer Engineering   *SEP 2016 – MAY 2020*
- GPA: 3.877 /4.00 (Summa Cum Laude)

HONORS & AWARDS

Duke University	**- ACM SIGMOBILE Student Community Grant**	*AUG 2021*
Rutgers University	**- Class of 2020 graduation with highest honor (Summa Cum Laude)**	*MAY 2020*
Rutgers University	**- top 5% in Electrical and Computer Engineering (Junior, Senior)**	*2019, 2020*
Rutgers University	**- top 10% in the School of Engineering (Sophomore, Junior, Senior)**	*2018, 2019, 2020*

Dean's List: Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Spring 2019

Math honor session
- Honor session of Multi Calc   *SEP 2017*
- Honor session of Calc II   *JAN 2017*

PUBLICATIONS

Poster Abstract: Investigating the Biological Impacts of Radio Transmissions
Murtadha Aldeer, Joseph Florentine, Justin Yu, Liam Ryan, Zhenzhou Qi, Jakub Kolodziejski, Michael Haberland, Richard Howard, and Richard P. Martin
ACM SenSys 2020 – The 18th ACM Conference on Embedded Networked Sensor Systems

Poster Abstract: Enabling Concurrent IoT Transmission in Distributed C-RAN
Xiaoran Fan, Zhenzhou Qi, Zhenhua Jia, and Yanyong Zhang
ACM SenSys 2018 – The 16th ACM Conference on Embedded Networked Sensor Systems

ACADEMIC EXPERIENCE

Research Assistant, Duke University, Durham, NC   *AUG 2021 – Present*
Department of Electrical and Computer Engineering
- Implement a spectrum sensing pipeline to perform extensive spectrum measurements and data collection for characterizing the spectrum usage and properties of potential interferers; develop an intelligent control plane, which integrates software-defined networking and machine learning techniques, for efficient spectrum monitoring, management, and resource allocation.

Research Assistant, Cornell University, Ithaca, NY   *SEP 2020 – MAY 2021*
Weill Cornell Medicine | Department of Biomedical Engineering
- Developed a customized Multiple Sclerosis Lesion Segmentation (MulS) challenge that allows teams to submit their outcomes for competition. Use Pyqt5 and VTK to design GUI for our new segmentation method. Reproduced methods: FLEXCONN, OASIS, LST, TOADS to compare to our results from the new segmentation method. This work was in collaboration with Hang Zhang and Professor Yi Wang.

Research Assistant, Rutgers University, Piscataway, NJ
Wireless Information Network Laboratory (WINLAB)

JAN 2018 – MAY 2020

- Proposed an experimental design to determine if honeybees can sense RF transmissions in frequencies from 1MHz (AM radio) to 6 GHz. Deployed a custom-designed RF bee feeder near beehives to test honeybees' RF sensing ability. Designed PCB for experiential tasks and EAGLE customized libraries for specific hardware. Poster abstract appeared in *ACM SenSys'20*. This project was in collaboration with Murhadha Aldeer, Joseph Florentine and Professor Richard Howard.
- Designed a home stereo system where speakers can automatically adjust phases according to people's position to produce the best sound effect with the same output of physically adjust angles of them. Techniques used are one-bit phase alignment algorithm and a system demo was built with embedded devices with live data presentation. This work *won the 7th place in ECE 2020 Capstone Design Project*. This project was in collaboration with Dr. Xiaoran Fan.
- Developed a distributed cloud radio access network (C-RAN) which has tens of distributed radio frontends using USRP N210s software-defined radios (SDRs) in a 20x20x3 m^2 area as part of the open-access ORBIT testbed (https://www.orbit-lab.org/). By exploiting the inherent hardware properties of low-end IoT devices and the spatial diversity of distributed C-RAN system, we showed that the C-RAN can potentially decode collided signals from low-end IoT devices with all signal processing been done on the cloud. Poster abstract appeared in *ACM SenSys'18*. This project was in collaboration with Dr. Xiaoran Fan and Professor Yanyong Zhang.

PROFESSIONAL ACTIVITIES

Society of Asian Scientists and Engineers (SASE), Rutgers University, Piscataway, NJ
  E-board Member: Treasure (Year 2018)

SEP 2017 – MAY 2020

- Participate in Professional, cultural events and community services
- Handle budgets of the organization

Engineering Ambassador – School of Engineering, Rutgers University, Piscataway, NJ

SEP 2018 – MAY 2020

- Provide campus tours, sit on student panels, participate in Engagement events
- Serve as a representative to share the mission and vision

Learning Assistant at Rutgers Learning Center - Physics IIA recitation, Rutgers University, Piscataway, NJ

SEP 2018 – MAY 2020

- Subject: Physics IIA Recitation
- Practice communications skills and leadership skills
- Address students' problems and grade pre-recitation exercises

TECHNICAL SKILLS

Programming Languages:
  C/C++, Java, Python, MATLAB, R, Pytorch, UGS, MAPLE

Development Tools / Design Software:
  GNU-Radio, LT-Spice, P-Spice, EAGLE

SELECTED COURSES

Duke University
- Programming, Data Structures, and Algorithms in C++ (ECE551, Fall 2021)
- Computer Engineering Machine Learning & Deep Learning (ECE661, Fall 2021)

Cornell University
- Operating System (CS4410, Spring 2021)
- Computer Network (CS4450, Spring 2021)
- Datacenter Computing (ECE 5710, Spring 2021)
- Embedded Operating System (ECE5725, Fall 2020)

Rutgers University
- Control System Design (ECE417, Fall 2019)
- Digital Singal Processing (ECE346, Spring 2019)
- Linear System and Signals (ECE345, Fall 2018)