



Tre' R. Jeter

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EDUCATION

Ph.D. in Computer Science

University of Florida, Gainesville, FL

Expected 2026

Research: Study of Blockchain Technology with an Emphasis on Computer Architecture and Security

Committee: My Thai

Bachelor of Science in Computer Science

April 2021

Minor in Cyber Security

Magna Cum Laude

Claflin University, Orangeburg, SC

Senior Thesis: "Utilizing QEMU for Model-Specific Register Analysis Based on an Architecture and Operating System Agnostic Approach"

Committee: Deidra Morrison, Barry Rountree, Abdelrahman Desoky, Ramaier Sriram

Bachelor of Science in Computer Engineering

April 2021

Minor in Cyber Security

Magna Cum Laude

Claflin University, Orangeburg, SC

Non-Degree Seeking

May 2017

University of South Carolina-Upstate, Spartanburg, SC

Scholars Academy: Dual program for high school students to earn college credit and get ahead on college coursework. A total of 87 credits were earned in 4 years before pursuing a Bachelor's degree

RESEARCH EXPERIENCE

Utilizing QEMU for Model-Specific Register Analysis Based on an Architecture and Operating System Agnostic Approach

January 2020 – April 2021

Lead Researcher assisted by Dr. Deidra Morrison and Dr. Barry Rountree

- Investigated capabilities of the Quick Emulator (QEMU) as it relates to Model-Specific Registers
 - Used an Equinix Metal server to host the experiment while setting up SSH keys and a firewall for further security precautions
 - Created scripts to setup a privileged user space, setup non-privileged user space, copy SSH keys and an iso image, install an iso image, and run an iso image after a successful boot process at the installation phase
 - Proved capturing read call values from a non-privileged user space is possible from 21 of the 26 monitored MSR's in the Ubuntu Operating System

Analyzing Multiuser Power Allocation in Satellite Communications Using a Cooperative Game-Theoretic Approach **September 2020 – May 2021**

Undergraduate Research Assistant to Dr. Wei Wan

- Investigated optimal strategies in satellite communication systems to precisely allocate power among multiuser terminals who share a frequency-selective Gaussian interference channel
- Funding: National Science Foundation Research Initiation Award under Award Number 1900984

Cyber Resiliency Introduced by blockchain Processing for Secure Transmission (CRIPSeT) **May 2020 – August 2020**

Cyber Security Engineer Intern at the Space Dynamics Laboratory under Todd Eppich

- Investigated networking protocols and executed attacks on internal systems using Kali Linux Suite
- Categorized 66 vulnerabilities in a threat model of a simulated satellite mission from low to critical
- Investigated blockchain, known vulnerabilities, and its ability to mitigate a Command Intrusion Attack
 - Theoretically proved using blockchain within a simulated satellite mission would completely mitigate a Command Intrusion Attack
 - Successfully executed a ReEntrancy Attack on an internal sample blockchain using the Solidity IDE

Programming and Manipulating Model-Specific Registers **May 2019 – August 2019**

Computational Intern at Lawrence Livermore National Laboratory under Dr. Barry Rountree

- Implemented a task-oriented command-line tool for reading, writing, and modifying Model-Specific Registers via the Lawrence Livermore National Laboratory MSR-Safe Kernel interface
 - Decreased the setup time for performance profiling of Model-Specific Registers by 67%
 - Performance profiling visuals were created in R using data collected from FireStarter

Investigation of Vulnerability Scanners **May 2018 – August 2018**

Cyber Security Intern at Lawrence Livermore National Laboratory under Joshua Sherfield

- Compared vulnerability scanners, Nessus and OpenVAS, to identify which of the two generated the most useful and reliable data
- Modified a python script to convert Nessus CSV data files into XML data files
 - XML data files were properly formatted for integration into a network mapping system
 - Data allowed for the visualization of possible vulnerabilities within the laboratory network

PRESENTATIONS

1. Wan W., Jeter T. A Cooperative Game for Optimal Multiuser Power Control in Satellite Communication. Society for Industrial and Applied Mathematics Conference on Optimization, July 20-23, 2021 (Poster Presentation)
2. Jeter T., Rountree B., Morrison D. Utilizing QEMU for Model-Specific Register Analysis Based on an Architecture and Operating System Agnostic Approach. Annual Honors Thesis Presentations, Claflin University, Orangeburg, SC, March 30, 2021 (PowerPoint Presentation)
3. Jeter T. Cyber Resiliency Introduced by blockchain Processing for Secure Transmission. Space Dynamics Laboratory, Logan, UT, August 7, 2020 (PowerPoint Presentation)
4. Jeter T., Estien A., Tucker C. Manipulating Programmable Model-Specific Registers. Lawrence Livermore National Laboratory Poster Symposium, Livermore, CA, August 6-7, 2019 (Poster Presentation)
5. Jeter T. Exploring Nessus and OpenVAS Integration for a Network Mapping System. Lawrence Livermore National Laboratory Poster Symposium, Livermore, CA, August 2, 2018 (PowerPoint Presentation and Poster Presentation)

HONORS AND AWARDS

Doctoral Research Assistantship, University of Florida, Gainesville, FL	August 2021- Present
GEM Fellowship, National GEM Consortium, Alexandria, VA	August 2021 – Present
Consortium Enabling Cybersecurity Opportunities and Research	August 2017 – May 2021
Honors College Scholarship, Claflin University, Orangeburg, SC	August 2017 – May 2021
The Abney Foundation Endowed Scholarship	August 2017 – May 2021

PROFESSIONAL INVOLVEMENT

Kappa Alpha Psi Fraternity, Inc. **March 2020 – Present**

- Serve as the President of the Gamma Nu Chapter of Kappa Alpha Psi Fraternity, Inc. at Claflin University
- Serve as the liaison between undergraduate members and the Southeastern Province

Phi Beta Lambda Business Fraternity, Inc. **November 2019 – Present**

- Serve as the President of the Omicron Alpha Beta Chapter of Phi Beta Lambda Business Fraternity, Inc. at Claflin University
- Contribute and lead professional development and business-related seminars on campus

Alpha Kappa Mu National Honor Society **February 2020 – Present**

- Serve as the President of the Alpha Theta Chapter of Alpha Kappa Mu National Honor Society at Claflin University
- Assist in expressing the importance of academic excellence on the campus of Claflin University

UNIVERSITY SERVICE

Student-Athlete Tutor, Claflin University Athletic Department

August 2017 – May 2021

Supplemental Instructor, Claflin University Mathematics Department

March 2019 – May 2021