Charles Nimo

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EDUCATION

Masters in Computer Science, Spring 2023, The University of Texas at Austin
Virginia Commonwealth University (VCU), Richmond, VA May 2017 **Bachelor of Science in Computer Engineering**
Minor: Computer Science

RELEVANT SKILLS

- C/C++, JAVA, python, Linux Shell programming, Assembly, VHDL, MATLAB, Swift 3.0 • Experience with Android, iOS, and Windows Application Development
- Design, Implementation, and testing of digital systems
- Software Engineering principles and practices
- Understanding of computer architecture and performance optimizations
- Program on ARM microprocessor using C/Assembly programming language, interface sensors & I/O devices • Simulating, modeling, and design of computer system components
- Circuits design and analysis

PUBLICATIONS

Leccadito, M., Yemaneberhane, B., **Nimo, C**., Bakker, T., Klenke, R., (2017). *Investigating Encrypted IEEE 802.15.4 and DigiMesh Communications for Small Unmanned Systems*, AIAA Information Systems-AIAA Infotech @ Aerospace, AIAA SciTech Forum.

RELEVANT EXPERIENCE

Graduate Intern – Data Platforms Group, **(Intel, Remote/Austin, Texas)** *May* 2021 – August 2021
Worked with the Mathematical Modeling team in the Data Platforms group to improve their data processing and visualization tools that they use to gain insights on vast amounts of data to render smart solutions for Intel Customers. Used machine learning techniques to make predictions to determine optimal configurations for a given simulation model system.

Software Engineer II, backend – OpenManage Enterprise (SDK), **Dell, Round Rock, TX** *June* 2017 – May 2021
Worked to migrate an existing service as a reactive microservice, built as a non-blocking and asynchronous solution resulting in huge performance enhancements in a number of areas including memory footprint, CPU load, thread utilization, data loss, and responsiveness.

Software Engineer II, backend – OpenManage Enterprise, **Dell, Round Rock, TX** *June* 2017 – Present • Developed a solution in response to a request by the Department of the Defense (DOD) for account management in the application. As a result, it provided improvements to user experience in for session management, account configuration, session sync between multiple connected consoles in a network while also enhancing the security and integrity of the application.

Software Engineer II, backend development – OpenManage Enterprise, **Dell, Round Rock, TX** *June* 2017 – Present • Designed and developed several server-side RESTful API's using the Spring Framework in Java for factory settings on the management console.

- Improved security by implementing secure authentication mechanism for users on for account sessions in the management console using python and RESTful API's in Java.
- Configured and implemented solutions to bolster the security of user sessions in the server-side development environment
- Worked to solidify Field Service Debug Workflow for Dell-RACADM in OpenManage Enterprise Modular

Firmware Engineer **Dell EMC,** Round Rock, TX June 2017 - Present • Working on all aspects of software development life cycle (using specifications to assist in design documentation, code development, debugging, validation)

- Design and implement firmware on embedded controller (MIPS/ARC/ARM core) processors in a single threaded/interrupt driven, and also in real time OS environment
- Implement solutions using C programming language and conduct design/code reviews

Embedded Firmware Engineer Intern, **Dell,** Round Rock, TX May 2016 – August 2016 • Worked as a firmware engineer

on next generation of Dell PowerEdge servers
- Created a binary, packaged in firmware, that retrieves critical server data (system info, sensor data, etc.) from iDRAC and writes it to a VGA Display
- Binary allows iT administrators and server personnel convenient access to system information and reports actions performed on server

RESEARCH EXPERIENCE

Undergraduate Researcher, **VIP Collaborative UAV Team,** VCU January 2017 – May 2017 • Worked on GCS Dashboard android application, which provides GCS operator with real-time attributes of UAV through a TCP connection
- Expanded application by developing maps display using Mapbox API's and integrating with GCS Dashboard • Maps provide real-time tracking of UAV during flight; maps of selected regions are cached and rendered for offline use

Undergraduate Researcher, **VIP Collaborative UAV Team,** VCU August 2016 – December 2016 • Worked as a member of a three-person team to integrate the wireless XBEE S6B with the Raspberry Pi 3 for the MCS (Mission Control Station)
- Developed a class specifically for XBEEs to wrap existing VACs communication standard around XBEE API communications protocol in order for the module to successfully transmit and receive data
- Data packets are parsed and then packed into new XBEE API protocol to be sent out for Wi-Fi transmission by the XBEE S6B

Undergraduate Researcher, **VIP Collaborative UAV Team,** VCU August 2015 – May 2016 • Worked as member of two-person team on a Vertically Integrated Project for Unmanned Aerial Vehicle research • Established secure communication between ground control station and flight control system using an XBEE 802.15.4 wireless module
- Developed tests to analyze the performance of XBEE at different baud rates, packet sizes with encryption enabled

ACADEMIC PROJECTS

Senior Capstone Project, *VCU* September 2016 – May 2017 • Contributed to design of a data acquisition system to monitor the brake performance of a vehicle incorporating real-time brake-line pressure and temperature reading capabilities; The system is integrated with a GPS system to track speed, acceleration and deceleration, as well as provide maps of routes taken
- Data is viewed overlaying on a map, implemented with a Google Maps web page applet, to show where events occurred
- Device also displays real-time information at runtime regarding brake temperature and pressure, along with device status messages for error reporting and brake squeal detection, on a small LCD display.

Operating Systems, *VCU* February 2016 – May 2016 • Worked on a four-person team to design a simulation of a simple operating system in C++ • OS was designed with 16 MB of RAM, CPU Clock Cycle of 10 Hz, I/O requests handling • Each process featured PCB (Process Control Block) containing important information for each process • OS featured preemptive multitasking of processes using time-slicing
- Made use of Five State Model for Operating Systems

Microcomputer Systems, *VCU* November 2015 – December 2015 • Designed a robot to complete the following tasks: maze navigation, line follow, and draw an Image, in C language
- Created an android app that sends characters via Bluetooth to control the robot. Robot was programmed using ARM Cortex-M3 microcontroller

Digital Systems, *VCU* November 2015 – December 2015

- Worked on a two-person team to design and implement a version of Conway's "Game of Life" using a Digilent Nexys-2 board (FPGA) in VHDL
- Nexys-2 board was interfaced with a VGA monitor to display the game; game was played on a 17 x 17 grid with

four initial patterns

• Design also featured an interactive mode, where user can select their own pattern to be played once game starts • Game also featured a system reset button that resets system to beginning when pressed

Software Engineering: Specification and Design, *VCU August* 2015 – December 2015 • Contributed to creating an android app that allows user to make flashcards and quizzes to study. App makes uses of MySQL Database and contains several features such as favorites, edit, delete, tutorial, etc.

Digital Logic Design, VCU April 2015 • Designed a traffic light controller that simulates two traffic lights at an intersection using Xilinx tools to be synthesized and mapped to an FPGA

CONFERENCE PRESENTATIONS

Leccadito, M., Yemaneberhane, B., **Nimo, C**., Bakker, T., Klenke, R., (2017). *Investigating Encrypted IEEE 802.15.4 and DigiMesh Communications for Small Unmanned Systems*, AIAA Information Systems-AIAA Infotech @ Aerospace, AIAA Sci-Tech Forum. Grapevine, Texas.

PERSONAL PROJECTS

Graduhit Feb 2020 – Present • I am a co-founder of Graduhit, an AI-powered web application that leverages a machine learning recommendation engine to provide students with strong personalized job matches by considering both the preferences of the student and a given job posting. Graduhit aims to tackle many of the struggles faced by Millennials in the job market today to aid students in a smoother transition into the workforce. More information provided on website: https://graduhit.com

ORGANIZATIONS

American Institute of Aeronautics and Astronautics January 2017 – Present Institute of Electrical and Electronics Engineers January 2017 – Present Phi Eta Sigma National Honor Society, VCU March 2014 – Present National Society of Black Engineers, Senator, VCU February 2014 – Present