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JOHN BUMGARDNER

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EDUCATION
North Carolina State University, Raleigh, NC
B.S. Computer Engineering | Electrical Engineering | GPA: 3.78   May 2021
M.S. Computer Engineering (Accelerated Bachelors-Masters)   May 2022
Relevant Courses: Data Structures and Algorithms, Topics in Data Science, Object-Oriented Design and Development, Internet Protocols, Software Engineering
Honors: Duke Energy ECE Scholar, Tommerdahl Scholarship Recipient, Dean's List, Eta Kappa Nu

WORK EXPERIENCE AND RESEARCH
SAS Institute | Software Engineering Intern | Cary, NC   May 2020 – August 2020
- Supporting SAS production software such as SAS9 and Viya3 working on the Production Security and Engineering Team.

FREEDM Systems Center | Software Engineer | Raleigh, NC   September 2019 – May 2020
- Development of multithreaded embedded C applications. Used data structures and foreground-background algorithms to maintain high switching frequencies by utilizing timers and interrupts.

Cree Lighting | Intelligent Lighting Engineering Intern | Durham, NC   May 2019 – August 2019
- Design of internal test board featuring 8-bit microcontroller (ATtiny1616) and wrote basic C firmware to increase test time of RF control sensors by 1600%.

SELECTED PROJECTS
JPEG Style Image Compression System (MATLAB)
- Programmed a lossy image compression based on the JPEG standard. Utilized discrete cosine transforms to encode and decode compressed images.

Internet of Things Remote Controllable Car (C)
- Designed and developed software systems for TI – MSP430 microcontroller using the C programming language for a self-driving, WiFi enabled electrical car.

Automated Daily Newsletter (Python)
- Interfaced with the OpenWeatherMap and Trello APIs to generate personalized weather reports, clothing recommendations, and list of items requiring action, delivered daily through email.

Peer-to-Peer with Centralized Index (Python)
- Implemented a simple peer-to-peer file sharing system using sockets and multithreading. Used a simplified HTTP format along with TCP to facilitate messages between peers and the server.

MeyerAndBugsBot – Anti-Semitic Twitter Scanner (Java)
- Interfaced with Twitter4J, a Java wrapper to the Twitter API to check if a user expresses hateful anti-Semitic opinions. Still in development.

STUDENT INVOLVEMENT
Institute for Electrical and Electronics Engineers | President | Raleigh, NC
- Organize recruitment events, technical talks from partner companies, hackathons, robotics competition teams, and numerous networking opportunities.
- Led establishment of IEEE Scholarship, a merit based financial award for NC State ECE students to be selected by former Presidents.

SKILLS
- C/C++
- Python
- Java
- Ruby
- Git
- Linux