

Simeon Babatunde

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Career Summary

A PhD student in computer science with hands-on experience in embedded systems, software and data engineering. Focused on building hardware and software innovations that enable battery-free sensor networks to power the future of Internet of Things (IoT). Working toward becoming a research leader in the emerging fields of IoT and Artificial Intelligence.

Research Interests

My research lies at the intersection of **batteryless computing** and **wireless sensor networks**, particularly focusing on investigating novel and efficient communication mechanisms for emerging **battery-free energy-harvesting** devices and sensors. I am interested in enabling large scale deployment of batteryless sensors in daily life applications - from smart home to smart cities, wildlife tracking, remote environmental monitoring and wearables.

Professional Experience

PERSIST Research Lab, Clemson University, SC

Oct. 2018 – Present

Graduate Research Assistant

Advisor: Jacob Sorber

Focus: Embedded Systems, Intermittent computing, Sensor Networks, Energy Harvesting.

Involved in: i) researching efficient networking protocols for emerging batteryless devices and sensors, and ii) mentoring undergraduate research assistants.

School of Computing, Clemson University, SC

Aug. 2017 – Oct. 2018

Graduate Teaching Assistant

i) Lead TA for CPSC 1071 (Programming Techniques and Methodology). ii) Held lab. sessions, office hours, and coordinated with other TA's in ensuring seamless content delivery. iii) Topics included program design, implementation, testing and verification, basic data structure and analysis of algorithms using C and C++.

Venture Garden Group, Lagos, NG

Dec. 2015 – Jul. 2017

Data Engineer

Manager: Abdurahman Adebisi

Focus: Data Science and Engineering, Business Intelligence.

i) Developed and managed a Data Lake built on Apache Hadoop ecosystem. ii) Powered the data driven governance initiative in Nigeria through advanced analytics. iii) Identified business problems that could be solved with analytics and communicated findings to business decision makers. iv) Won the first data science bootcamp competition.

Splashers Technologies, Lagos, NG

Aug. 2014 – Nov. 2015

Software Engineer & Data Analytics Researcher

Manager: Olawale Ogunibe

Focus: Mobile application development, Data visualization.

i) Team lead, Mobile App Development. Won the Outstanding Contribution to Consolidation Goals Award, October 2015. ii) Developed the first mobile solution for financial settlement among key stakeholders within the Nigerian power sector. iii) Mentored new members of the team on adoption and utilization of key technologies.

Academic Qualifications

Clemson University, Clemson, SC

2017 – 2022

Doctor of Philosophy, Computer Science

Obafemi Awolowo University, Ile-Ife, NG

Sep. 2014

Bachelor of Science, Computer Engineering

First Class Honors, 4.6 CGPA on a 5.0 scale. Second best CE student.

Federal Polytechnic Ilaro, NG

Sep. 2008

National Diploma, Electronics and Electrical Engineering

Distinction, 3.8 CGPA on a 4.0 scale. Graduated as the best EEE student.

Selected Technical Skills

- **Programming Languages:** C/C++, Python, R, Java.
- **Platforms and Tools:** TI MSP430, Arduino, Autodesk Eagle, Contiki, SDR, TensorFlow, BLE, Android, ELK stack (Elasticsearch-Logstash-Kibana), Apache Hadoop, Scikit-learn, Flask.
- **Version Control System:** Git, Subversion, Mercurial.
- **Certifications:** Data Science Specialization, John Hopkins University (Coursera).

Recent Projects

- **Python 2.7.x Interpreter:** Implemented in C/C++ using Flex and Bison ([Github](#)).
- **UV Risk Detection and Prevention:** A wearable device designed to inform users about the current and cumulative UV exposure level ([Github](#)).
- **Private Object Detection in Images using YOLOv3:** A public and private object detection program built on YOLOv3 and darknet ([Github](#)).
- **Packet Sniffing and Spoofing:** A sniffer and spoofing program implemented using the pcap library and raw socket in C ([Github](#)).
- **Autonomous Line Following Robot:** Built with basic electronic components ([YouTube](#)).

Relevant Coursework

- Embedded Networked Systems - Internetworking - Design and Analysis of Algorithms
- Advanced Operating Systems - HandsOn Machine Learning - Translation of Programming Languages - Security in Emerging Computing and Networking Systems

Extracurricular Experience

- **National Society of Blacks in Computing:** Gave a talk on “tips for doing great research” at the NSBC 2019 conference in Atlanta, Georgia.
- **Upsilon Pi Epsilon (CS Honor Society):** i) Won the 2019 UPE Academic Achievement Award
ii) Participated in the outreach program (robotics and coding camp) for elementary students at the Forest Acres Elementary, Easley.
- **Association for Computing Machinery (ACM):** Student member (8949491).
- **School of Computing Graduate Students Association (Clemson):** Active member.