Afolabi N.H Durodola

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EDUCATION

Rice University, *Houston, Texas* Expected May 2028
Bachelor of Science in Electrical and Computer Engineering
Honors/Awards: Sustaining Excellence in Research (SER) Scholar, Rice Datathon 2026 (2nd), CyberPatriot State Finalist (3x), TSA Coding (3x) and Video Game Design (2x) State Finalist
Relevant Coursework: Digital Logic Design • Intro. Computer Engineering • Intro. Physical Electronics • Analog Circuits • Intro. Machine Learning • Signals, Systems & Transforms • Probability & Statistics • Random Signals • Honors Linear Algebra
Global / Experiential Coursework:
Social & Affective Neuroscience, *Rice Global Paris Centre, France (Summer 2025)*
- Intensive upper-division course examining neurobiological mechanisms of social cognition, emotion, motivation, and emotion regulation

TECHNICAL PROFICENCY

Programing and HDL: Python, C/C++ (CUDA), Java, JavaScript/TypeScript, SQL, Verilog HDL, Bash, Matlab, SystemVerilog, ARM & x86 Assembly

Digital Design: RTL Design, Combinational & Sequential Logic, Finite-State Machines, ALU Design, FPGA Development

Hardware and EDA Tools: Xilinx Vivado, Icarus Verilog, PCB Design (KiCad), Circuit Simulation (LTspice), Oscilloscopes & Signal Generators & DMMs (WaveForms)

Web, Cloud and Databases: Supabase, SQLite, MongoDB, BigQuery, DuckDB, AWS (S3), React and Node.js

ML & Accelerated Computing: NumPy and Pandas, scikit-learn, PyTorch and TensorFlow, CUDA and OpenCL

DevOps & MLOps: Docker, Kubernetes,MLflow, Prometheus

RESEARCH EXPERIENCE

Undergraduate Researcher - Segarra Lab, *Graph Signal Processing (GSP) & Machine Learning Laboratory*
***Rice University**, Houston, Texas (Summer 2026*)
- Researched graph neural networks (GCN, GraphSAGE, GAT) and self-supervised learning, developing a framework using graph embeddings and machine learning for genomic repeat detection.

Undergraduate Researcher - Bao Lab, *Laboratory of Biomolecular Engineering and Nanomedicine*
***Rice University**, Houston, Texas (December 2024 – December 2025*)
- Applied flow cytometry/FACS, PCR/qPCR, CRISPR/Cas9 gene editing, and transfection to analyze sickle cell biomarkers, validate therapeutic targets, and optimize HEK293T cell cultures.

PROJECTS

GPU-Accelerated Graph Computing Engine
Personal, *Houston, Texas (May 2026 - Present)*
- Developing and optimizing C++ GPU kernels using CUDA/HIP for sparse graph computation, implementing parallel memory optimizations and benchmarking performance against CPU and GPU baselines.

Pipelined CPU Microarchitecture & SystemVerilog Verification
Personal, *Houston, Texas (February 2026 - August 2026)*
- Designing a 5-stage pipelined processor in Verilog/SystemVerilog, implementing hazard detection, forwarding, and branch control with automated regression testing and FPGA timing analysis

LEADERSHIP & DEVELOPMENT

Doerr Institute for New Leaders Ambassador & Programs
***Rice University**, Houston, Texas (June 2024 – Present)*
- Representing the Rice University Doerr Institute for New Leaders as a Student Ambassador while completing individual and group leadership coaching and workshops in team dynamics, communication, conflict resolution, and decision-making.

VOLUNTEERING & SERVICE

Betty and Jacob Friedman Holistic Garden Farmhand, *Houston, Texas (December 2024 - Present)*
- Helping to maintain the Betty and Jacob Friedman Holistic Garden!

Rice Pre-medical Society Wiess College Representative, *Houston, Texas (September 2024 - May 2025)*
- Planned for more effective partnership and involvement between Texas Medical Center and Rice.

Partnership for the Advancement & Immersion of Refugees Leadership, *Houston, Texas (January 2024 - March 2026)*
- Working to support disadvantaged and refugee-status middle school children on their transition to life in the United States

AFFILIATIONS, SKILLS, & INTERESTS

Affiliations: Institute of Electrical and Electronics Engineers (IEEE), Rice Data Science (Rice DS), Rice Pre-Medical Society (RPMS), National Society of Black Engineers (NSBE), Japanese American Citizens League (JACL)

Spoken Languages: English – Native, Japanese– Limited Working Proficiency, Turkish - Elementary Proficiency,

Certifications: Autodesk Inventor (Certified User), MTA: Python, CA: Java, AI in Healthcare, First Aid/CPR/AED, Basic Life Support

Interests: Crocheting, Gardening, Healthcare technologies, Judo/Grappling, Reading, and Eating good food!