

Jamal Daher

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Physics | Instrumentation | Laboratory Testing | Technical Support

PROFESSIONAL SUMMARY

Physics graduate with a mathematics minor and 37 earned graduate credit hours in medical physics and nuclear engineering. Supervised academic laboratory experience with radiation therapy linear accelerators, radiation measurements, beam dosimetry, quality assurance testing, and electronics. Additional background in programming, scientific data analysis, RF troubleshooting, technical literature research, and independent cryptographic analysis and cybersecurity study. Hands-on experience with mechanical and electrical repairs, equipment restoration, pool systems, and home remodeling using hand and power tools.

TECHNICAL SKILLS

Instrumentation and electronics: Oscilloscopes, digital multimeters, signal generators, laboratory power supplies, soldering, and circuit assembly.

Mechanical repair and installation: Small engine and outboard motor repair, tractor restoration, pool electric motor repair, pool plumbing, filter installation, and saltwater chlorine system installation.

Hand and power tools: Common hand tools, table saw, miter saw, jig saw, band saw, drill press, sanders, wood lathe, circular saw, power drills, and scroll saw.

Radiation and accelerator training: Supervised linear accelerator operation, radiation detectors, Geiger-Müller counters, beam dosimetry, academic quality assurance testing, and radiation safety principles.

RF communications: Antenna modeling and simulation, custom RF equipment, and signal troubleshooting.

Programming and web technologies: Python, C++, JavaScript, PHP, MySQL, HTML, and CSS.

Scientific computing and documentation: Mathematica, MATLAB, Monte Carlo N-Particle (MCNP), NumPy, pandas, LaTeX, Microsoft Office, and Google Workspace.

Operating systems: Windows, Linux (multiple flavors) and macOS

Artificial intelligence: AI-assisted coding, data analysis, task automation, and information presentation.

Cybersecurity and penetration testing: Kali Linux, nmap, WireShark, Burp, Hashcat, and John the Ripper

ACADEMIC LABORATORY EXPERIENCE

Radiation Physics and Accelerator Laboratory Training

Georgia Institute of Technology | Supervised graduate laboratory training

- Operated radiation therapy linear accelerators under supervision during graduate medical physics training.
- Performed radiation measurements, beam dosimetry, and quality assurance tests involving linear accelerator systems.
- Worked with accelerator components, Geiger-Müller counters, and other radiation detectors; applied dosimetry and radiation safety principles in academic laboratories.

Physics and Electronics Laboratory Experience

Mississippi State University | Academic coursework and independent projects

- Used oscilloscopes, digital multimeters, signal generators, laboratory power supplies, and circuit boards in university laboratories and personal projects.
- Practiced soldering, circuit assembly, and laboratory measurement techniques; applied circuit theory, electromagnetic principles, and mathematics to experimental work.
- Completed intermediate and modern physics laboratory coursework involving experimental procedures, scientific measurements, and data analysis.

EDUCATION

Georgia Institute of Technology

Graduate study in Medical Physics and Nuclear Engineering | 2011–2014; 2019–2021

37 earned graduate credit hours | GPA: 3.24/4.00 | Degree not completed

Radiation coursework: Radiation Physics; Radiation Detection; Radiation Dosimetry; Radiation Shielding; Medical Health Physics; Special Topics - BD-PND.

Medical physics coursework: Radiation Therapy Physics; Radiation Therapy Treatment Planning Laboratory; Nuclear Medicine Physics; Diagnostic Imaging Physics; Imaging Principles in Medical Physics; Radiation Biology and Oncology; Radiological Anatomy.

Mathematics: Mathematical Methods in Applied Science I.

Mississippi State University

Bachelor of Science in Physics, cum laude | May 2010

Mathematics minor | Overall GPA: 3.75/4.00

Physics coursework: Electrical Circuits for Scientists; Electromagnetic Fields I; Intermediate Mechanics; Modern Physics; Optics; Introduction to Quantum Principles; Solid State Physics; Thermal Physics; Nuclear and Particle Physics; Intermediate Physics Laboratory; Modern Physics Laboratory.

Mathematics and writing: Numerical Analysis I; Differential Equations II; Foundations of Mathematics; Honors Technical Writing.

Itawamba Community College

Associate of Arts | May 2007 | GPA: 4.00/4.00

Selected coursework: Calculus I, II, III, and IV; Physics I and II with laboratories; Differential Equations I; Engineering Mechanics; General Chemistry I and II with laboratories; Astronomy I with laboratories; Computer Programming w/ C++; Oral Communication.

PROFESSIONAL EXPERIENCE

Technical Aide Intern

Johns Hopkins University Applied Physics Laboratory | Summer 2009

- Conducted technical literature search on global Earth conductivity models to support team research project on TTE (through the Earth) submarine communications systems using ELF/VLF radio waves.

Physics Tutor

Mississippi State University | Fall 2007; Summer 2008

- Tutored trigonometry- and calculus-based Physics I, II, and III and Modern Physics; adapted explanations, problem-solving strategies, and study plans to individual needs.

Physics and Biology Laboratory Assistant

Itawamba Community College | 2006–2007

- Prepared equipment for physics classes, assisted students during laboratory activities, and organized laboratory equipment storage for instructional use.

Physics and Mathematics Tutor

Itawamba Community College | 2006–2007

- Tutored College Algebra, Trigonometry, Calculus I & II and calculus-based Physics I & II; adapted explanations, problem-solving strategies, and study plans to individual needs; coordinated study groups.

INDEPENDENT PROJECTS AND ADDITIONAL EXPERIENCE

Mechanical and Electrical Repair and Restoration

Independent personal projects

- Repair small engines and older outboard boat motors; currently restoring a 1954 Ford Jubilee tractor.
- Repair pool electric motors and pool plumbing; install pool filters and a saltwater chlorine conversion system.
- Carry out home remodeling and woodworking projects using common hand tools and stationary and portable power tools, including saws, a drill press, sanders, a wood lathe, and power drills.

A858 Cryptographic Research — Independent Contributor & Community Moderator

2011–Present

- Developed Python programs to automate cryptographic analysis, test candidate passwords and cipher methods, and process thousands of encrypted posts.
- Collaborated on decrypting 1,000+ posts using Triple DES (3DES) and published 3,515 distinct decrypted outputs with documented methods and passwords.
- Recovered 506 missing posts and maintained research archives, timelines, and technical documentation.
- Applied AI tools to support code development, data analysis, task automation, and the organization and presentation of technical information.

Independent Cybersecurity and Penetration Testing

2011–2015

- Discovered and reported a network security vulnerability affecting a regional telecommunications company.
- Completed online security challenges involving web application vulnerabilities, network testing, password cracking, and capture-the-flag exercises.
- Used Kali Linux, Nmap, Burp Suite, Hashcat, and John the Ripper to investigate vulnerabilities, analyze network traffic and test password security in practice environments.

LICENSE

FCC Amateur Radio License, Amateur Extra Class | Call sign: AI5YX

LEADERSHIP ACTIVITIES AND ACADEMIC HONORS

Leadership and Service

- Society of Physics Students, Mississippi State University: President, 2009–2010; Vice President, 2007–2009.
- Sigma Nu Scholarship Chairman, 2009–2010.
- College of Arts and Sciences Dean's Student Advisory Council, Mississippi State University, 2008–2009.
- Itawamba Community College Science Club Vice President, 2005–2006.

Scholarships

- Duff Walker Sudduth Scholarship - Mississippi State University Foundation - 2009.
- Stanley Rundel Memorial Scholarship (MSU Physics Dept), 2008.
- Phi Theta Kappa Scholarship, 2007.
- Mississippi Space Grant Consortium (MSSGC) / NASA Scholarship, 2007.
- ACT Scholarship (full financial aid at Itawamba Community College), 2005–2007.

Academic Honors and Memberships

- Phi Kappa Phi, 2008–2010.
- Selected for a NASA Stennis Space Center internship, 2009; declined the opportunity.
- Mississippi State University President's Scholar, Fall 2007; Dean's Scholar, Spring 2008 and Fall 2008.
- Phi Theta Kappa member, 2005–2007; All-Mississippi Academic Team, 2007.
- Itawamba Community College President's List, 2005–2007.
- Third place in the individual competition, Gainesville State College Mathematics Tournament, 2007.
- Third place in the team competition, Gainesville State College Mathematics Tournament, 2007.
- Itawamba Community College Honors Day Physics Department Award, 2007.
- Itawamba Community College Honors Day Mathematics and Computer Science Division Award, 2007.