

BAHAA MOHAMMAD

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Iowa City, IA 52242 | US Citizen | Fluent in Arabic



EDUCATION

May 2027: *Master of Science In Engineering, Electrical & Computer Engineering (MSE)*

GPA: N/A

May 2026: *Bachelor of Science in Engineering, Biomedical Engineering (BSE)*

GPA: 3.22

PUBLICATIONS

Abdel-Malek, K., Bhatt, R., Law, L. F., Murphy, C., & Mohammad, B. (2025). *Enhancing Soldier Readiness: Biomechanical Evaluation of the U.S. Army Combat Fitness Test Using Santos Digital Human Modeling*. Proceedings of the 9th International Digital Human Modeling Symposium (DHM 2025). Springer, Cham.

RELEVANT EXPERIENCE

Human Technology, Iowa City, IA

April 2024 – Present

Systems Engineer | May 2025 – Present

- Maintained and optimized high-scale, cross-platform software systems (C, C++, C#, Fortran, XML), successfully compiling and debugging a solution comprising 140+ projects and contributing 10+ new features while managing all GitLab version control responsibilities.
- Revolutionized the software delivery lifecycle and security by architecting and deploying a comprehensive, self-updating installer system, including a custom backend server and a dedicated API for secure user authentication and software validation.

Software Engineer | April 2024 – May 2025

- Spearheaded the design and implementation of a new, high-performance rendering pipeline and architecture, successfully migrating a large-scale legacy application from Vrttools to the custom Diligent Engine using the Assimp asset loader. This C++ core integration was 100% seamless with the existing C# application layer, passing all critical integration tests.
- Contributed significant new features and drove modernization efforts, including leading the transition of multiple user interfaces to WPF and developing a new application launcher to streamline user access and update delivery.

ENGINEERING RESEARCH EXPERIENCE

University of Iowa, Iowa City, IA

Fall 2025

Undergraduate Researcher

- Conducting foundational research in medical imaging (MRI), focusing on processing brain scan data to gain quantitative neurological insights.
- Developed and implemented Machine Learning (ML) principles to interpret complex imaging data and accelerate the path toward new diagnostic tool development.

Undergraduate Research Assistant

Summer 2023

- Implemented python algorithms to process high-volume brain scan video data into numerical values for quantitative analysis.
- Maintained high data integrity and created clear visualizations for effective communication of complex quantitative findings to non-technical research colleagues.

TECHNICAL SKILLS

Areas of Expertise: Data Science, Data Analysis, Data Processing, Machine Learning, AI, Generative AI, Prompt Engineering, DevOps, Containerization, Microservices, Full-Stack Development, Systems Engineering, Bioinformatics

Languages: C++, C#, Python, C, Java, R, MATLAB, Swift, Kotlin, JavaScript, TypeScript, SQL, HTML5

Technologies: Git, GitLab, Docker, Pandas, NumPy, Scikit-learn, .NET, WPF, Angular, React, Node.js, Unity, Unreal Engine 5, Linux/Unix, Cloud Computing, SQL, MongoDB, BLAST, STAR, Samtools