OSAMA DABBOUSI

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osamadabb.github.io

EDUCATION

King Abdullah University of Science and Technology (KAUST) — **Thuwal, Saudi Arabia**
Master of Science in Computer Science — *Expected December 2025*
Relevant Coursework: Distributed Systems, Databases, Numerical Linear Algebra, Optimization, High Performance Computing

Boston University, BU Faculty of Computing & Data Science — **Boston, MA**
Bachelor of Science in Data Science, *Summa Cum Laude* — May 2024

Relevant Coursework: Computer Systems, Algorithms and Data Structures, Software Engineering, Natural Language Processing, Stochastic Algorithms, Deep Learning, Reinforcement Learning.

WORK EXPERIENCE

Boston University — **Boston, MA**
Teaching Assistant — *January 2023 - May 2024*
- Assisted in Intro to Algorithms, Natural Language Processing, and Probability & Statistics courses; provided detailed feedback to enhance students' grasp of advanced concepts.

Aramco Americas — **Boston, MA**
Data Science Intern — *June - August 2023*
- Produced a retrieval-augmented generation (RAG) pipeline capable of querying thousands of academic articles for well-cited and accurate answers to user questions.
- Designed interface that leverages LLMs to answer questions using cited excerpts of relevant academic texts.
- Launched a user-friendly web application, enabling company employees to seamlessly access the pipeline.

RESEARCH EXPERIENCE

High-Performance Computing Research — *October 2024-present*
King Abdullah University of Science and Technology
- Implemented finite difference simulations for computational physics using CUDA, optimizing parallel performance
- Optimized memory access patterns and control flow to minimize warp divergence, leveraging an in-depth understanding of GPU architecture for maximum throughput.
- Applied advanced parallel computing techniques, ensuring efficient utilization of hardware resources and scalability for complex numerical simulations.

Machine Learning Research Group — *September 2023 – December 2024*
Boston University
- Collaborated with a team of 8 researchers in the creation of a meta-learning pipeline capable of selecting between dozens of training configurations for the task of cancer classification.
- Created modules that interfaced with the larger pipeline, which were used for data augmentation, feature extraction, and model training.
- Implemented cloud-based model training leveraging a distributed system using SSH protocols.

Directed Study with Professor Wayne Snyder — *June 2021 - December 2022*
Boston University
- Conducted research on audio processing with deep learning under the supervision of Professor Wayne Snyder.
- Developed pre-processing code for data loading/augmentation/segmentation, label creation, and conversion of audio files to spectral features on 4 different audio-sets spanning hundreds of thousands of samples.

HONORS & AWARDS

BU College of Computing and Data Science (CDS) Academic Excellence Award — *May 2024*
- Recognized as the top undergraduate student at the College of Computing and Data Science for outstanding academic performance, leadership, and collaboration skills.

PATENTS

- "Automated Methods for Generating Labeled Benchmark Data Set of Geological Thin-Section Images for Machine Learning and Geospatial Analysis" – (pending) U.S. patent application No. 18733-1426001. *August 23, 2023*

SKILLS & INTERESTS

Languages: English (fluent), Arabic (fluent)
Technical Skills: Experienced in Python, PyTorch, C++, SQL, CUDA, and Microsoft Office
Interests: Video Game Development, Basketball, Chess, Hiking, Educational Youtube videos