

Hassan Hobballah

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EDUCATION

Bachelor in Computer Science | Aug 2022 - May 2025 | **American University of Beirut**

- **Modules:** Database Engineering, Cloud Engineering, Data Structures & Algorithms, Software Engineering, Machine Learning and GPU computing.

EXPERIENCE

Full Stack Developer - Intern | IDS | *Dec 2024 - Jan 2025* | Beirut, Lebanon

- Built APIs and UIs using .NET (ASP.NET Core), React.js, and MySQL Server.
- Built a web application for community platform users to engage and interact.
- Implemented JWT tokenization, authentication, management, and search/filter functionality.
- Integrated user engagement features

Sentiment Analysis for Mental Health

- Built a text classification system to detect mental health conditions from user statements using machine learning and deep learning models.
- Applied advanced preprocessing techniques including synonym-based augmentation and attention-based LSTM networks to enhance model understanding.
- Compared traditional and neural approaches to identify strengths in context-aware classification and emotional tone detection.

Cloud-Based Molecule Toxicity Classification System

- Developed a scalable toxicity classification system for molecules using AWS services to support vaccine and drug research.
- Built end-to-end cloud pipeline: S3 data ingestion, Lambda-based preprocessing, SageMaker ML model deployment, and API Gateway for real-time predictions.
- Secured system access with AWS IAM and Cognito.
- Tackled large datasets via batch processing; optimized model performance using SageMaker Autopilot.

GPU-Accelerated Sparse Matrix Multiplication / Parallel Programming

- Implemented a high-performance sparse matrix multiplication algorithm on GPU using CUDA.
- Developed sequential and parallel versions leveraging COO, CSR, and CSC formats to optimize memory access and computation.
- Applied shared memory and atomic operations to improve memory efficiency and reduce write conflicts.
- Integrated advanced optimizations across multiple kernel versions to maximize speedup and reduce execution time.

SKILLS & CERTIFICATES

- **Languages:** C#, Java, C/C++, Python, Javascript/TypeScript, HTML, CSS
 - **Certifications:** Machine Learning, Web Development
 - **Skills:** .NET, Spring Boot, React, Next.js, Flutter, Firebase, PostgreSQL, SQL Server, AWS, Git
 - **Interpersonal Skills:** Conflict Resolution, Fast Learner, Leadership, Adaptability, Never Give Up!
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