

LEEN HARFOUSH

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EDUCATION

Lebanese American University

Aug. 2024 – May 2027 (Expected)

Bachelor of Science in Computer Science (GPA: 3.7)

Beirut, Lebanon

- Fully Funded Community Service & Engagement Higher Education Scholarship (USAID)

RESEARCH

Detection of Moral Meaning Loss in Large Language Models

Jan. 2026 – May 2026

Research Member / LAU

Beirut, Lebanon

- Proposed the Epistemic Fidelity Score (EFS), an NLP metric for detecting semantic distortion in LLM-generated interpretations across four linguistic dimensions.
- Built an end-to-end pipeline to extract dystopian literature passages, generate interpretations via three local LLMs, and compute per-dimension linguistic feature deltas.
- Trained a ridge regression model calibrated against human annotations to aggregate feature deltas into EFS scores, enabling cross-model comparison across ~900 source-interpretation pairs.

Technologies: Python | spaCy | VADER | NRC Emotion Lexicon | scikit-learn | Ollama | pandas | matplotlib

PROJECTS

BingeBoard: Movie & TV Tracker

Jan. 2026 – Apr. 2026

- Built a full-stack movie and TV tracking app in a team of four, featuring personalized watchlists, favorites, recently viewed tracking, and JWT-authenticated role-based access control.
- Developed the React frontend including user authentication, guest restrictions with redirect flows, and watchlist management, with secure password hashing and Tailwind-based UI.
- Implemented a Node.js/Express backend with MongoDB, RESTful API endpoints, and enterprise security middleware (Helmet, CORS, rate limiting), deployed to production via Netlify and Render.

Technologies: React | Vite | Tailwind CSS | Node.js | Express.js | MongoDB | Mongoose | JWT | Helmet | bcryptjs | Netlify | Render

BuzzMate: Match Making System

Jan. 2026 – Apr. 2026

- Built a full-stack matchmaking app in a team of five featuring preference-based candidate matching, real-time end-to-end encrypted messaging via WebSockets, and automated date scheduling through Google Calendar integration.
- Designed and implemented the entire frontend UI across all application pages, ensuring responsive and interactive user experience with JWT-secured role-based access.
- Deployed to production using Vercel and Railway, and documented the project across four engineering phases covering functional and non-functional requirements, architecture, testing, and implementation.

Technologies: Node.js | NestJS | Socket.IO | MySQL | HTML | CSS | Tailwind CSS | JavaScript | Google Calendar API | Vercel | Railway

Time Capsule Event Planning Database

Sept. 2025 – Dec. 2025

- Implemented a relational database system using MySQL (DDL, DML, constraints, advanced queries).
- Applied ER modeling, schema design, and implemented advanced SQL features including constraints, views, triggers, and stored procedures.
- Configured user roles and access controls to simulate database security.

Technologies: SQL (MySQL Workbench) | Microsoft Visio | Draw.io

PROFESSIONAL DEVELOPMENT

Forward MENA Junior-to-Mid Developer Cohort	May 2026 – Present
<i>Participant</i>	Beirut, Lebanon
– Selected for an intensive software engineering cohort covering frontend, backend, DevOps, cybersecurity, APIs, databases, React, Docker, CI/CD, AI engineering, RAG systems, and modern development workflows. – Developing practical skills in Git/GitHub, debugging, accessibility, authentication, real-time systems, testing, cloud deployments, and LLM-powered application development.	

Time Management Workshop CSE, LAU	Sept. 2024
Computer Literacy Workshop CSE, LAU	Sept. 2024
Team Building & Conflict Resolution Workshop CSE, LAU	Oct. 2024

VOLUNTEERING

MMKN Volunteer Physics Teacher	Feb. 2026 – Present
InnovaThrive Researcher	Sept. 2024 – May 2025
Youth Department Lebanese Red Cross Student Volunteer	Jan. 2024 – Mar. 2024
Ahla Fawda Recycling Volunteer	Dec. 2024

SKILLS

• Technical – Programming Languages: Python, Java, C, SQL, JavaScript – Frameworks & Libraries: React.js, Node.js, Express.js, NestJS, Tailwind CSS, scikit-learn, pandas, matplotlib, spaCy, MongoDB, Socket.IO – NLP & ML: VADER, NRC Emotion Lexicon, Ridge Regression, Ollama – Databases: MySQL, MongoDB, MySQL Workbench – Web Technologies: HTML, CSS, REST APIs, WebSockets, JWT, Helmet, React Router – Dev & Deployment: Git, GitHub, Vite, Netlify, Render, Vercel, Railway, Draw.io, Microsoft Visio – Operating Systems: Linux – Theory: OOP, Algorithms & Data Structures, Complexity Analysis • Languages – Arabic (Native), English (Fluent), French (Beginner)	
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