

Joud Senan

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EDUCATION

BS in Computer Science and Engineering – AI & Cybersecurity Tracks | American University of Beirut – Expected May 2028

TECHNICAL SKILLS

Programming Languages: Python, C++, Java, Verilog, Assembly, HTML, CSS, JavaScript (basic)

Frameworks & Libraries: PyQt5, Chainlit, FastAPI, OpenCV

AI / MLOps & DevOps: Mistral AI, LLaMA 3, Docker, SQL/NoSQL (SQLite)

Version Control & OS: Git, GitHub, Bash, Linux (Kali, Ubuntu)

Tools & Platforms: VMware, VirtualBox, Jupyter Notebook, VS Code, Jira, Trello, Canva, Google Colab

Hardware & Embedded Systems: FPGA, Vivado, RISC-V, Freedom Studio, Raspberry Pi

EXPERIENCE

Undergraduate Research Volunteer (URVP), American University of Beirut – Conducting research on AI-based modeling of firm and ice-sheet dynamics using neural networks for solving PDEs; **research paper in progress**.

Research Assistant, American University of Beirut – Improved ChartQA through dataset cleaning and standardization and contributed to AraSTEM by prototyping analysis pipelines and LLM prompts to enhance research usability.

Alcademy Assistant, American University of Beirut – Supported and delivered AI bootcamps by preparing instructional materials, guiding sessions, and coordinating logistics for effective learning experiences.

PROJECTS

Guided Vision — Edge AI Assistive System (Python, Computer Vision, Raspberry Pi): Developed and deployed a real-time edge-AI system on Raspberry Pi that detects environmental hazards using computer vision and provides low-latency audio guidance for visually impaired users.

PolyLab — Secure Full-Stack Educational Platform (FastAPI, Web Technologies): Developed a full-stack, security-focused platform supporting authentication, classroom workflows, and interactive learning tools.

RV32IF Datapath with Floating Point Unit (Verilog, Vivado): Designed a single-cycle RISC-V RV32IF processor with an integrated IEEE-754 compliant floating-point unit, enabling correct execution of floating-point instructions.

StudyWise — AI Medical Study Assistant (LLaMA 3, Chainlit, AWS): Built an AI-powered study assistant trained on medical datasets to generate quizzes and explanations; responsible for the ML pipeline and presented the project as part of the **Amazon Mentorship Program at AUB**.

Mistral AI Web Application (Mistral AI, FastAPI): Built and deployed an AI-powered backend for scalable question-answering and content generation; showcased at the **All-Girls Code Bootcamp 2025**.

Smart Business Insights — Hackathon Project: Developed a data-driven analytics solution that transforms business data into actionable insights through automated analysis and interactive visualizations.

AUBoutique — Network Programming Application (PyQt5, Sockets): Designed a client-server application connecting buyers and sellers with real-time communication, demonstrating concurrency and networking fundamentals.

Elevator Controller — Verilog FSM Project: Designed and verified a finite-state machine-based controller for a 3-story elevator as part of EECE 320: Digital Systems Design at AUB.

Library Management System (Java): Implemented a Java-based system using OOP principles to manage book inventory, lending, rooms, and electronic resources.

CTF — Theta Machine: Completed and documented a capture-the-flag challenge emphasizing systematic enumeration, exploitation, and privilege escalation in a controlled lab environment.

LEADERSHIP AND ACTIVITIES

AI Journey & Alcademy Initiatives – Co-organized AI bootcamps, workshops, and technical events to expand AI exposure and build a student learning community.

AI Blog Contributor for Sail for Change – Write educational blogs on artificial intelligence, translating technical concepts into accessible insights for a broader audience.

Volunteer Tutor: Led group reviews and one-on-one tutoring in C++ and networking courses, supporting peers in improving academic performance.

HONORS AND ACHIEVEMENTS

Ranked 6th Nationwide – Lebanese Baccalaureate (General Sciences, top 0.1%).

Top Graduate in School's History – Highest academic record ever achieved at school.

Dean's Honor List – Multiple semesters at AUB.

Project Presentations – Research and AI projects presented at events including **Amazon ML Bootcamp**.