# Serena Farah

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## EDUCATION

**American University of Beirut (AUB),** *Computer and Communication Engineering* *Sep 2024 – Jun 2028*
- **GPA: 4.0/4.0,** Dean's Honor List every semester since Fall 2024; Honor Society Merit Scholarship

**Collège Protestant Français,** *French Baccalaureate General Sciences* *Sep 2022 – Jun 2024*
- Grade 19.1/20, Valedictorian (Primus Inter Pares), Félicitations du Jury; accepted to 120 universities in France

## RESEARCH EXPERIENCE

**American University of Beirut (AUB),** *Research Assistant – Network Security* *2026 – Present*
- Designing a lightweight, privacy-preserving re-authentication protocol for UAV handover in the Internet of Drones (IoD), applying homomorphic encryption only to the privacy-sensitive stages.
- Verifying security formally with Scyther, ProVerif, and Tamarin and benchmarking overhead against existing protocols, toward a journal publication.

**American University of Beirut (AUB),** *Research Assistant – Semantic Communications* *2026 – Present*
- Studying DeepSC, a Transformer-based semantic communication system for text that recovers sentence meaning, and applying transfer learning across channel environments.
- Evaluating BLEU and sentence similarity over AWGN, Rayleigh, and Rician channels, focusing on low-SNR robustness.

## PROFESSIONAL EXPERIENCE

**Webify,** *Co-Founder (webifylb.com)* *2026 – Present*
- Co-founded a Beirut web design studio building fast, low-cost websites for Lebanese small businesses, live in 3 to 7 days.
- Offer five packages, from landing pages to online shops with card payments and restaurant ordering tools, plus a care plan.

**American University of Beirut (AUB),** *Work Study Program (WSP)* *Jan 2026 – Present*
- Tutor undergraduates in Electric Circuits and Analog Signal Processing; weekly quizzes and targeted feedback raised average quiz scores by 12%.

**Women In Engineering,** *Industry Program (Amazon Industry Program 4.0, IEEE WIE AUB & Amazon)* *Jun 2025 – Sep 2025*
- Designed an AI model detecting early stages of Alzheimer's disease from speech, using dual-encoder and attention-based techniques, reaching over 85% accuracy while maintaining explainability.

**Omicron Pharmaceuticals,** *Internship in AI Development* *Apr 2023 – Jun 2023*
- Built an NLP module categorizing 5,000+ customer reviews of pharmaceutical products, informing product positioning.
- Helped decrease customer churn by 20% and pitched business applications, including sales forecasting, to stakeholders.

## EXTRACURRICULAR EXPERIENCE

**Teaching Assistant,** *Tutor – Introduction to Python* *Jan 2026 – Present*
- Led lab sessions and coding support, guiding students through debugging, algorithm design, recursion, and data structures.

**Outlook,** *Editor* *Jan 2026 – Present*
- Strengthen contributors' arguments and enforce editorial standards for a student-led platform promoting diverse perspectives.

**Student Clubs,** *Subcabinet & Team Member* *Oct 2025 – Present*
- AUB Honor Society (IT), Cogs & Caffeine Magazine (Sponsorship), SSEA (Podcast), Math Society (Event Planning)

## VOLUNTEERING

**MMKN,** *Math Tutor Volunteer* *Sep 2025 – Present*

**Min Albe NGO,** *Volunteer – humanitarian supply distribution* *Nov 2024 – Present*

## SKILLS & PERSONAL

**Certificates:** Amazon Industry Program 4.0 (IEEE WIE AUB & Amazon Women in Engineering), Artificial Intelligence Bootcamp – Zaka University, Chinese Bridge Delegation "Modern China" – Beijing Language and Culture University
**Languages:** Arabic (native), French (fluent), English (proficient), Spanish (B2), Chinese (HSK2)
**IT:** Python, C++, JavaScript, SQL, Stata, EViews, SPSS, Scyther, ProVerif, Tamarin, Office (Word, Excel, PowerPoint, Access)
**Interests:** Painting (esp. oil painting), outdoor enthusiast (hiking)