Leen Kharouf

Abu Dhabi, UAE
+971567641051 leenkharouf@nyu.edu linkedin.com/in/leen-kharouf leenkharouf.github.io

Education

New York University **August 2021 - June 2025**
Bachelor of Science in Computer Engineering | GPA: 3.8/4.0 *Abu Dhabi, UAE*
Completed a one-year study abroad at NYU Tandon School of Engineering

Brighton College Abu Dhabi **June 2020**
A-Levels: Maths (A), Chemistry (A*), Physics (A*)* *Abu Dhabi, UAE*

Experience

Medical LLM Benchmark Research Assistantship **Sep 2024 - Present**
New York University Abu Dhabi *Abu Dhabi, UAE*
- Developed benchmark datasets tailored for Arabic healthcare applications, ensuring cultural and linguistic relevance.
- Collaborated on training Large Language Models (LLMs) to address biases and enhance performance in tasks such as medical Q&A, dialogue, and clinical note generation.
- Assessed LLM capabilities through evaluation frameworks focused on ethical compliance, clinical relevance, and real-world applicability in Arabic medical contexts.

Freelance Artist and Creator **Oct 2021 - Present**
Personal Creative Practice *Abu Dhabi, UAE*
- Created personalised artworks for a diverse client base, tailoring commissions to specific requirements.
- Created branding and marketing materials, utilizing industry-standard tools like Adobe Photoshop and Figma.
- Managed end-to-end project delivery, including client interaction, conceptualization, and final execution.

Equipment Center Assistantship **Jan 2023 - May 2023**
New York University Abu Dhabi *Abu Dhabi, UAE*
- Managed equipment check-in/out, maintenance, and inventory control for a diverse range of technical devices.
- Supported training sessions, assisting students and faculty in the effective use of specialized tools and resources.

Projects

Optimization of Zero-Shot Object Navigation Model (Python) **Sep 2024 - Present**
- Enhanced object detection and reasoning efficiency by integrating CLIP and GLIP models into navigation workflows.
- Implemented robust benchmarking tests to evaluate model performance across diverse environments.

Lunar Lander: reinforcement learning (Python) **Dec 2024**
- Implemented a reinforcement learning agent to autonomously land a lunar module in a simulated environment.
- The project utilises Python, PyTorch, and libraries such as OpenAI Gym to train neural networks with techniques like experience replay and epsilon-greedy exploration.

ECG Design (Cadence, Altium) **Sep - Nov 2024**
- Designed and built an ECG instrumentation amplifier circuit using advanced PCB design tools like Cadence and Altium.
- Collaborated with manufacturers to produce prototypes, ensuring alignment with design specifications.
- Successfully assembled and soldered components, validating circuit performance against medical-grade standards.

Interactive 3D Self-Avoiding Walk Simulation (Unity, C#) **May 2024**
- Developed an interactive 3D maze simulation featuring non-colliding agents and dynamic camera controls for optimal visualization.
- Incorporated explosion events and user-reset functionality to enrich gameplay and testing scenarios.
- Optimized performance to maintain real-time responsiveness during complex interactions.

ColorScape: A Chromatic Game of Life (Unity, C#) **April 2024**
- Engineered a visually dynamic variant of the Game of Life with zones that influence cellular behavior.
- Integrated custom visual feedback mechanisms to enhance gameplay engagement.
- Conducted user testing to refine interactions and visual clarity.

Cache Simulator (C++) **Nov - Dec 2023**
- Implemented a dual-cache system featuring LRU replacement policies to manage data efficiently.
- Leveraged object-oriented programming to create modular and reusable components.

Embedded Messenger (Arduino, C++) **Nov - Dec 2023**
- Developed a handheld messenger device featuring gesture-based message creation and LED display.
- Integrated motion sensors to enable intuitive user interactions.
- Designed a robust testing framework to ensure reliability under various conditions.

Parallax: An Interactive Illustration (JavaScript) **June 2023**
- Created an interactive digital artwork leveraging parallax motion to simulate a dynamic 3D effect.
- Combined artistic and technical skills to deliver an engaging and visually appealing user experience.

Flight Reservation System (C++) **April 2023**
- Designed an interactive system for flight booking, incorporating dynamic memory allocation and `OOP` principles.
- Simulated real-world scenarios using randomized flight data for robust testing.
- Implemented a user-friendly interface to facilitate seamless navigation and interaction.

Fall Detection Device (Arduino) **Oct - Dec 2021**
- Engineered a device using accelerometer and gyroscope data to detect falls and send emergency alerts.
- Incorporated user-friendly interfaces to improve accessibility and ease of use.

Portfolio

Personal Portfolio Website (HTML, CSS, JavaScript)
- I've built a responsive personal portfolio website showcasing my engineering and artistic projects.
- The site is fully coded using HTML, CSS, and JavaScript, with interactive elements for user engagement.
- Check it out here: leenkharouf.github.io.

Skills

Programming Languages: C++, Python, C, C#, HTML/CSS, MATLAB, Verilog, VHDL

Technologies: PCB Design, Cadence, Altium, Unity, Adobe Photoshop, Figma, Procreate, NumPy, Jupyter, Scikit-learn, Pandas

Languages: English, Arabic, Spanish