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MUHAMMAD HAMZA

CURRICULUM VITAE

LEADERSHIP ROLES/ INITIATIVES / POSITIONS

Founder, SitaraMakers | Custom-Engineered DIY STEM Kits

Oct 2024 - present

- Curriculum Designer
- Designed **assembly manual** and Engineered **Pakistan's first low-cost** DIY balloon-powered car, **assembled in under 5 minutes**, with a **production cost under 50 PKR** and **90% recyclable materials**.
- Focused on creating affordable and sustainable STEM kits for underprivileged children, distributed through NGOs to promote hands-on learning and engineering exploration.
- Led STEM workshop in School and Taught Bachmates how to build prototypes and create similar initiatives
- Led another STEM workshop at Begum Inayat Foundation **engaging 50+ children, who made the balloon powered car and at the end raced with it to get learning outcome**

Founder & CEO, CondensedAI | Youth Tech Startup

May 2024 - present

- Developing affordable AI tools to enhance quality of life, starting with mental health (emotion-expressing robot) and expanding to physical mobility (future prosthetics R&D).
- Researching adaptive AI companions to reduce stress in high-pressure workplaces, using low-cost hardware and emotion-sensing algorithms.

Founder, Project "SERPA" | WWF-Pakistan eco-internship

Jun 2024 - Aug 2024

- Founder of eco initiative "PROJECT SERPA" sustainable environmental restoration and planting Alliance
- Led educational seminars at Children's Library Complex and Alif Laila Library, engaging **70+ students per session**.
- Designed and managed digital content, optimizing projector visuals for seamless presentations.
- Conducted Expert Interview on waste management
- conducted **10+** public interviews and **raised 20,000-PKR for plantation drive** and plastic removal
- successfully planted **20 Fruit bearing plants with a total cost of 50,000-PKR** at askari X park

INTERNSHIPS / WORK EXPERIENCE

Terfort Company | Game Development Intern | with stipend | 40 Hours

Jan 2025 - feb 2025

- Designed game environments in Unity, improving performance **by 15% on Android and iOS**.
- Conducted backend coding, analytics, and testing, **ensuring 98%** functionality in pre-release games.

RESEARCH / PERSONAL PROJECTS

- Research paper published on the Metacognitive strategies differ across Academic levels and influence success: A cross-sectional study. - **International Journal of Scientific Research and Modern Technology**. -May 2025

ESP8266 microcontroller expressive robot | 1-year development

Nov 2023 - Nov 2024

- Developed a user-friendly desk pet robot with a 128x64 OLED screen, using individually bitmapped graphics.
- Wrote and optimized over **10K lines of code** to implement five distinct facial expressions and corresponding sounds in a single-loop architecture (**first in Pakistan**).
- Created an physical companion, providing real-time emotional feedback and enhancing user interaction in a desk environment for office workers

Arduino Microcontroller Projects

Nov 2023 - Nov 2024

- Built a robotic arm using 3 servos and 2 joysticks, constructed with popsicle sticks.
- Created a mobile phone-controlled Bluetooth motorboat with complex soldering and calibration, utilizing air as thrust.
- Designed a one-of-a-kind mechanical projector using static image swapping, achieved by precisely timed servo actions.

COMMUNITY SERVICE

Director Media, | Sahara-e-umeed NGO

Dec 2023 - present

- Managed social media accounts, utilizing data analytics to drive **10K+ engagement** and **50K+ views**.
- Created and designed media content, editing videos for monthly projects, each averaging **3K+ views**.
- **edited 4 Research and Publication articles**
- Since its inception, Sahara-e-Umeed, **a team of 15 dedicated members** across four departments—**Media**, Research, Finance, and Operations—has raised an impressive 700,000 PKR through various community-driven charity projects. **As the Director of the Media Department, the highest position in the department, I have been deeply involved in every project.** My leadership and hands-on contributions have played a crucial role in the success of these initiatives, with all our work proudly **featured on the organization's Instagram page @saharaeumeed.**

Volunteer – Behtar Mustaqbil Foundation

Oct 2024 - present

- Led 2 fieldwork projects, improving lives through educational and infrastructure initiatives, impacting 200+ individuals.
- Collaborated with Naik Nawalay NGO and home charity trust Organization to organize and execute fun activities, snacks and learning activities designed for children.

COMPETITIONS

- **Winner of SparkTank Pakistan LaunchPad 2025 cohort 3 (550+ applicants nationwide) - National level**
- **TOP 10 - Pakistan Mathematical Modelling Challenge - National level (200+ participants)**
- **Project Finalist - International Learners Agency Paradigm (Conference) Innovation Maze category (selected out of 300+ applicants nationwide) (2025) - international level**

GRADES AND SUBJECTS

Beaconhouse Defence Campus

AS Level | August 2024 – Present

- Studying Mathematics, Further Mathematics, Computer Science, and Physics
- 1A* 5As 1C, IGCSEs completed in June 2024.

TECHNICAL SKILLS

- Project Prototyping
- Website development
- Graphics Designing
- Machine Learning Algorithms
- Project Management
- User Research