MOUSA PIRZADA

5 Mariner Terrace, Toronto, ON | mousapir@gmail.com | +1 (647) 676 2237

EDUCATION

Bachelor of Applied Science   Sep 2021 – Current
Mechatronics and Robotics Engineering | Queen's University, Kingston ON
- Courses: Data Structures and Algorithms, Computer Architecture, Industrial Automation, and Signals and Systems.

KEY SKILLS

- **Programming & Tools:** Python, C++, Java, JavaScript (React), C#, Arduino IDE.
- **Data & AI:** Generative AI (OpenAI, Langchain), AWS (SageMaker, Comprehend, Rekognition), SQL, PostgreSQL, MySQL, Oracle.
- **Embedded Systems & Hardware:** ESP32, Load Cell Sensors, Stepper Motors, Soldering, Circuit Design, Breadboarding.
- **Mechanical & Design:** SolidWorks, Prusa Slicer, 3D Printing & Assembly.
- **Web & Automation:** Webscraping, System Integration, Project Management.
- **Content & Communication:** Synthesia, UX Writing, Instructional Design, Technical Documentation.

EMPLOYMENT EXPERIENCE

AI Content Developer   May 2024 – Present
Michigan, USA (Remote) | Creekwood Dental
- Developed AI-powered content solutions for dental clinics and healthcare professionals, including patient-facing video education and workflow automation tools.
- Designed and implemented "NoteBuddy," an AI transcription tool that converted dentist dictations into formatted clinical notes for software like Dentrix; reduced manual entry time by 60%.
- Created a series of 10+ post-op videos using Synthesia for Creekwood Dental, improving patient compliance and decreasing post-procedure questions.
- Collaborated with stakeholders to script, iterate, and tailor content for patient clarity and regulatory compliance.

Machine Learning Associate   Jul 2023 – Aug 2023
Pakistan | Systems Limited
- Designed and implemented a fully voice-interactive AI receptionist capable of answering any question about the company using real-time Speech-to-Text and Text-to-Speech technology integrated with generative AI models.
- Integrated AWS tools (SageMaker, Comprehend, Rekognition) to support natural language understanding, voice interaction, and scalable deployment.
- Delivered a full presentation to the Machine Learning department and a 1-on-1 demo with the company president, showcasing the AI receptionist's functionality and technical architecture.
- Applied advanced problem-solving to optimize AI performance, response accuracy, and user interaction flow.

Residence Don   Sep 2023 – Apr 2024

Queen's University, Housing and Ancillary Services | Kingston, ON

- Mentored 40 students throughout their 1ˢᵗ year at Queen's University in residence acting as their first point of contact for support and concerns, while endorsing residence policies and fostering inclusivity amongst students.
- Acted as a liaison between residents and mediated interpersonal conflicts on an ad-hoc basis to cultivate a safe and inclusive environment.
- Organized and planned monthly community-based programming, advocated for student concerns and safety to the residence coordinators, and promoted EDII principles on the residence floor through events and floor meetings.
- Responded to emergencies and managed incidents in coordination with campus security.

PROJECT EXPERIENCE

Autonomous Smart Pet Feeder   Sep 2023 – Nov 2023

Kingston, ON

- Built an autonomous pet feeder using an ESP32 microcontroller, Load Cell Sensor, and stepper motor for accurate food dispensing.
- Developed an iOS-compatible app with scheduling and portion control features, including Siri voice command integration.
- Programmed embedded control logic in Arduino IDE and contributed to 3D printing and hardware integration.
- Designed and wired the electrical system, integrating sensors, power management, and signal routing.

Robotic Rescue Project   Jan 2024 – May 2024

Kingston, ON

- Designed and built a three-wheeled robot for a Jurassic Park-themed gameboard with autonomous and manual control modes.
- Integrated ultrasonic sensors, servos, and a motor driver for obstacle detection and object manipulation.
- Programmed navigation and task execution, including gate activation and manual rescue operations via gamepad.
- Enabled remote control through WiFi communication for seamless operation in dynamic scenarios.