

Salman Sadiq

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MSc Robotics
IELTS (Academic): 8

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EDUCATION

Degree/Certificate	Institute/Board	Field of Study	Year	GPA
MSc.	National University of Science and Technology	Robotics and Intelligent Machine Engineering	2020-2024	3.5/4.0
BSc	Ghulam Ishaq Khan Institute of Engineering and Technology	Mechanical Engineering	2016-2020	2.74/4.0

EXPERIENCE

- **Software Motion(Suzhou)** Nov. 2024 - Mar. 2025
Algorithm Engineer (SLAM) Suzhou, Remote
 - Worked with the mapping team to generate high-definition maps using lidar-based SLAM techniques.
 - Implemented IMU preintegration and pose graph optimization to improve odometry accuracy.
 - Optimized open-source repositories such as FastLIO for real-time lidar odometry and mapping.
 - Developed a testing suite for lidar motion compensation and point cloud stitching.
 - Wrote code for transforming various datasets into ROS bags for seamless integration into the SLAM pipeline.
 - Worked on localization algorithms utilizing lidar and IMU-based odometry for improved positioning.
 - Tuned SLAM parameters and algorithms to enhance robustness and efficiency across diverse environments.
 - Conducted performance analysis and debugging of SLAM modules to ensure reliable operation in real-world scenarios.
- **AfD Engineering and Management Consultants** May 2022 - Jul. 2023
Survey Engineer Peshawar, Pakistan
 - Handled and set up commercial drones for field use photogrammetry in numerous sites across KP
 - Performed field surveys across numerous mountainous areas in KPK including Jamal Garhi, Matta, Takhtbai
 - Designed a custom GPS Survey device incorporating Arduino and ublox, for use as a Differential GPS station
 - Performed data analysis and created 3D models through image data using Agisoft Metashape
 - Trained YOLO Models for Road Crack Detection for use with custom dataset

PROJECTS

- **Fast Marching Tree Algorithm (FMT*) for Motion Planning in Dynamic Environments** Dec. 2022 - Jan. 2024
Master Thesis
 - Devised and tested two different motion planning algorithms for quick planning and replanning in dynamic environments
 - Introduced modification and path discretization strategy in order to improve convergence speed of the FMT* by 30% across a wide variety of scenarios
 - Experimented with different batch sampling strategies to improve path cost, especially in cluttered and narrow corridor environments
 - Created a waypoint-based replanning mechanism in case of unexpected and moving obstacles
- **Industrial Scale Pneumatic Jet Printer** Dec. 2019 - Jan. 2020
Bachelor Thesis
 - Designed and fabricated a 3D printer that uses compressed air for material extrusion.
 - Wrote a Python language interpreter to convert G-code into motor and extruder motion

SKILLS

- **Programming:** Python, C/C++
- **Packages:** Robot Operating System (ROS1 and ROS2), cmake, TensorFlow, OpenCV, SolidWorks, Matlab,
- **Operating Systems:** Linux
- **Non-Technical:** Multi-tasking, Project Management, English Skills

EXTRACURRICULAR

- **Director Liaison,** GIK Mathematics Society (GMS)
- **Music,** Harmonica