# Mohammed Asad Rehman

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**Address** Lassons Gate 10, Floor-3(M), 0270 Oslo, Norway

**Languages** English, Norwegian (A1)

**Nationality** Indian

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| **SUMMARY** |

A dynamic embedded systems developer with 6 years of experience. I am skilled in usage of, C++, python, and C# programming languages. Have knowledge of complete embedded product development life cycle, as well as have knowledge of multiple verticals under diverse set of domains including medical devices, gemmological test instruments, concrete N.D.T. equipment, expert in rapid prototyping and others. Hold bachelor’s degree in Engineering of Electronics and Communication and master’s degree with specialization in Intelligent Systems and Robotics.

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| **KEY SKILLS** |

* Embedded product development Life Cycle
* Firmware development
* Linux, Uboot, Yocto
* Hardware and Software debugging
* communication with UART, SPI, I2C, CAN
* Microprocessors, Microcontrollers 8/16/32bit
* GUI development in C#
* C, C++& Python
* Multiprocessing and Multithreading
* Bluetooth,WiFi, GSM,NFC, ZigBee interface

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| **EDUCATION** |
| **Master of Technology (Intelligent Systems and Robotics) (Jul 2011 – Dec 2014)** |
| IGNOU-I2IT Centre of Excellence, Pune, India |

Projects: 1. Image Processing model forcolour based logisticssorter using MATLAB and AVR.

2. Distance estimation with monocular camera using MATLAB Image Processing Toolbox.

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| **Bachelor of Engineering (Electronics & Communication Engineering) (Jul 2006 – June 2010)** |
| Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, India |

Project: 1. Ultrasound speed detection and ranging system schematic design and firmware development using 8051.-

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| **Post Graduate Diploma in Embedded Real-Time Systems (Feb 2016 – Aug 2016)** |
| National Institute of Electronics and Information Technology, Calicut, India |

Project: 1. Accelerometer based remote controller using hand movements as commands for home automation.

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| **WORK EXPERIENCE** |
| **Senior SoftwareDeveloper Feb ‘23 –Apr ‘23** |
| EmLogic AS**,** Asker, Norway |

* Provide consultancy to clients with embedded systems development requirements.

Projects: 1.Training of STM32-Discovery board to run FreeRTOS.  
2. Training on DE-10 Nano board to run Linux and uboot.  
3. Training on Linux Yocto.

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| **Senior Development Engineer, Electronics Jun ‘22 – Jan ‘23** |
| Elop Technology AS**,** Hamar, Norway |

* Firmware development on ARM AVR.
* Maintenance and development of unit test equipment for product manufacturing parts.
* Product Factory Acceptance Test and troubleshooting during device assembly.

Projects: 1. Firmware revision for PCB change.  
2. Automation of testing jig for testing of product with PE block.  
3. Test Jig for testing Load Cells.

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| Simplifai Cognitive Service Pvt. Ltd., Pune, India  **Oct ‘21 – May ‘22** |

* Firmware development.
* Debugging and troubleshooting firmware and electronic circuits.

Projects: 1. Patented concrete inspection tools.

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| **Electronics Design Engineer Oct ‘19 – Sep ‘21** |
| XentiQ Pte Ltd (Forefront Medical Technology Pte Ltd), Joo Koon, Singapore |

* Firmware development on PIC, PSoC and ARM-based microcontrollers for medical devices.
* Firmware/Software version control&test case development.
* Documentation: Software ISO documents, software change logs, test documents, manuals, etc..
* Debugging and troubleshooting firmware and electronic circuits.

Projects: 1. DevelopGUI and data logging firmware for intravenous cancer medicine delivery system with IEC 62304 software documentation.

2. Enhance firmware of portable video viewer to reduce standby mode power.

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| **Electronics Research Engineer Mar ’17 – Aug ‘19** |
| Presidium Instruments Pte Ltd. , Bukit Merah, Singapore |

* Firmware development for gemmological testers using PIC, PSoC and ARM-based microcontrollers.
* Linux software module development for gemmological instruments.
* Research and development of gemmological instruments.

Projects: 1. Develop image processing software in Linux for photololuminescence detection of gems.

2. Develop firmware for FLIR infrared camera to characterise gems on the basis of heat properties.

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| Presidium Instruments Thailand Ltd., Bangkok Metropolitan Area, Thailand |

* Firmware development for gemmological testers using PIC and PsoC microcontrollers.
* Debugging and troubleshooting gemmological instruments firmware and PCBs.

Projects: 1. Develop firmware of tester which measures heat capacity and electrical conductivity of gems.

2. Migrating firmware from PIC to PSoC. Andre-design PCB layout of gem tester.

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| **Project Engineer(contract) Oct ‘16 – Jan ‘17** |
| National Institute of Electronics and Information Technology**,** Calicut, India |

* Aid in Training Program: IoT, Embedded Systems, RTOS course material preparation.
* Experiment preparation for IoT, Embedded Systems, RTOS practical sessions of training programmes.

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| **Research Engineer Apr ‘14 – Dec ‘15** |
| Gade Autonomous Systems Private Limited, Mumbai, India |

* Rapid Prototyping of embedded systems and other device ideas.
* Firmware development using ATMEGA8 and ARM-based microcontrollers.
* Schematic design and PCB layout.

Projects: 1. Sports equipment with speech recognition, motion detection and infrared communication schematic, PCB layout and firmware development.

2. Health monitoring system prototype hardware and firmware development using accelerometer.

3. Interactive feedback taking robot prototype development using Raspberry-pi.

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| **REFERENCES** |
| **Imran Tamboli**  CTO, Simplifai AS |

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| **Sanat Wagle**  UiT The Arctic University of Norway · Department of Physics and Technology  PhD |

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| **PUBLICATIONS** |
| **Monocular Camera based Machine Vision Model to Estimate Distances**  **International Conference on Digital Signal and Image Processing (DSIP), 05th May-2013, Bhubaneswar, Procedings Journal**  **ISBN: 978-93-82208-91-4** |

Abstract- This paper presents a solution to the problem of measuring distances in known surrounding. Following text portrays an algorithm to estimate the actual distance of a symmetrical object of known dimensions with the use of a single camera. The distance calculation is performed using Digital Image processing without need of any additional sensors or reflective mirrors. Camera takes picture of object at exact location from where distance is to be estimated. Algorithm provides accurate estimations under acceptable error percentages. The algorithm can be implemented on live videos too.

*Keywords- Distance Measurement, Monocular Camera, Spatial Image Processing, Thin-lens formula.*

Date: 19-05-2022