MOHAMED SADIQ IKBAL

Robotics Research Engineer and XR Prototyper

SKILLS

C++

Python

C#

Unity3D

Unreal Engine

GIT

CONTACT

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MSIhub

Mohamed sadiq Ikbal

PROFILE

Robotics engineer, strong spatial computation skills, and a passion for software development. Experience developing end-to-end solutions for conducting experiments on a virtual reality-based robotic motion platform.

Researcher, worked on greenfield project from idea generation to client demonstration. Experience in supervising and guiding three master thesis. Experience teaching robotics simulation using CoppeliaSim for robotic masters students.

XR Prototyping, developed fast paced prototypes in Unity VR development. Completed a minimum viable project for a multiplayer networked VR physical interaction experience as a part of XR Bootcamp learning.

Enjoy developing algorithms and testing it on simulation and hardware. I am calm, positive and love contributing towards the success of the team's tasks.

WORK EXPERIENCE

Research Assistant Dec 2020 - Now

University of Genoa, Italy

Research on effective parametric reduction for motion cueing algorithms for car driving motion simulator. This research is part of the Regione Liguria research grant (RLOF18ASSRIC/85/1) for 'Virtual reality to increase awareness of driving risk'

- Individual research and project management
- Supervision and guidance of Master thesis
- Teaching robotics simulation for Masters in Robotics Engineering
- Reporting project status to the government official

Technologies include:

- Motion cueing algorithm development in C++ and deploying in Linux based controller for the motion platform (Parallel robot)
- Testing various use-cases, formulating questionnaires for user validation of the algorithm. Handling subjective and objective feedback and reiterating the algorithm.

Assistant System Engineer Sep2014-Jun2015

Tata Consultancy Services, India

Played an active role in the support and maintenance of the Java-based applications and SQL databases for the supply chain management team of The Home Depot, USA.

- Resolving tickets from onsite counterparts

LANGUAGES

English

French A2

Italian A1

Tamil

STRENGTH

Constant learning & knowledge sharing

Problem solving and versatile

Teamwork and collaboration

Identifying critical tasks

System Integration

MISC

CAD: Creo, OnShape

Mocap: Optitrack (Motive) & Vive Trackers

Rapid algorithm validation with Matlab and Simulink

ROS

VR devices: Oculus Quest, HTC Vive, Vive Pro

Code Optimization for Standalone VR

LUA scripting with CoppeliaSim (VRep)

- Regular interaction and updates with the clients
- Part of regular knowledge transfer and training on applications

Technologies include:

- SQL query writing
- Unix batch script maintenance

EDUCATION

Ph.D. Mechanics, Measurement and Robotics Nov2017-Oct2020
PMAR Robotics Group, University of Genoa, Italy

Motion Generation and Planning System for a Virtual Reality Motion Simulator: Development, Integration, and Analysis.
Thesis available at: `http://hdl.handle.net/11567/1046138`

European Master on Advanced Robotics (Erasmus+ double degree masters) Sep2015-July2017
Ecole Centrale de Nantes, France & University of Genoa, Italy

Awarded EMARO+ Consortium Scholarship. Received Master in Control and Robotics - Advanced Robotics from Ecole Centrale de Nantes and Master in Robotics Engineering (Laurea Magistrale in Robotica) from University of Genoa. Master thesis on motion cueing algorithm and minor project on cable robot workspace determination.

B.Tech Mechanical Engineering Aug2010-May2014
Sri Manakula Vinayagar College of Engineering, India

Graduated as Valedictorian. Participated in many robotics symposiums and lead/guided a team for two years to participate in robotics related events. Our thesis project was recognised by Confederation of Indian Industries (CII) as the Best Innovation Award.

PUBLICATIONS

- **M.S. Ikbal**, V. Ramadoss and M. Zoppi, "Dynamic Pose Tracking Performance Evaluation of HTC Vive Virtual Reality System," in IEEE Access, vol. 9, pp. 3798-3815, 2021.
- A. Sharma, **M. S. Ikbal** and M. Zoppi, "Acausal Approach to Motion Cueing," in IEEE Robotics and Automation Letters, vol. 4, no. 2, pp. 1013-1020, April 2019.
- V. Ramadoss, K. Sagar, **M.S. Ikbal**, D. Zlatanov and M. Zoppi, "Modeling and Stiffness Evaluation Of Tendon-Driven Robot For Collaborative Human-Robot Interaction," in IEEE International Conference on Intelligence and Safety for Robotics, 2021 (*Accepted for publication*)

HOBBIES AND INTERESTS

- Co founder and advisory board member of Smile Foundations (NGO, India)
- Badminton, hiking and traveling for food
- Up-skill and explore various software tools and robotics publications