Morteza Aliyari

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Robotic and Embedded System Developer

About me

I am a freelance robotic and embedded system developer with many hands-on experiences. I have done different projects in my interested field, which is robotic and UAV, with different groups. Therefore, I am confident to say that I am a team worker who can act individually.

Currently, I am looking for more interesting hands-on opportunity in robotic field, which challenge me to improve my knowledge.

Skill Highlights

- Raspberry pi3/4 & Arduino/ Linux OS
- STM32 (mainly H7 and F7 Generation)
- Multirotors/ROS/Gazebo/
- MATLAB/Simulink (SIL & HIL)
- Labview
- C/C++ (QT) and Python
- Navigation algorithm

Experiences

Jun 2017-Present

Research assistant at Malek-Ashtar University of Technology, Robotic and Control group

- Design and implementation swarm quadrotors using local navigation
- I simulated swarm Quadrotors in Gazebo using the ROS platform to show guidance control efficiency.
- I designed setup and Control Hybrid Systems With LabView/Openfresco/Abaqus
- I did many STM32 projects as: ADC/DMA/Ethernet by stm32f746
- I improved the attitude controller of a Quadrotor by using advanced controller called Model predictive controller. I used raspberry pi and Matlab code generation. The video of the mentioned project shown as below:

https://drive.google.com/open?id=1EFVVpPDv_qLvWluybRSgPEF6Zc-GlZjp

Sep. 2016- May 2017 **Systems Developer**

Malek-Ashtar University of Technology research group

- I designing and programming specific electronic boards by Altuim designer software for digital and analog IMU sensors to have more precise angular velocities as sensor outputs.
- I searched and modeling, Calibrating, and analyzing varies types of gyroscopes & acceleration sensors, like RLG, MEMS.
- I implemented navigation algorithms with/without GPS on real Time Linux based system.

Dec. 2015- May 2016 **Systems Developer**

- I built a robot manipulator for participating in the FIRA cup which ranked third in the competition (A video of the robot: https://drive.google.com/file/d/1Opv9KhxwCxTc3dN_ok-cO0B5VJ3xOxy7/view?usp=sharing).

Iran Electronics Company

- I designed and implemented of a magnetic field controller for a Helmholtz coil which simulated exact magnetic field we needed in project with Nano tesla resolution.
- I designed nonlinear controller and implemented on designed board to controlled object in specific point of space with magnetic field existence. The video of project uploaded:

  https://drive.google.com/open?id=1k0ObzlQRyoWGm3jsufXaGJrlXrNCF47F

Education

2015-2018 **Master of science in Electrical Engineering, Control Systems**

Malek-Ashtar University of Technology

Thesis title: Design and Implementation of a Quadrotor Flight Control System for a Specific Maneuver Using Model Predictive Control.

Advisor: Prof. Kashani-nia (akashaninia@mut.ac.ir)

2012-2015 **Bachelor of science in Electrical Engineering, Control Systems**

University of Zanjan

B.Sc project title: Implementation of a novel robot path planning algorithm for a probe robot

Advisor: Prof. Farhad Bayat (bayat.farhad@znu.ac.ir)

Publication

F.Bayat, S.Najafinia, and **M.Aliyari**, "Mobile robots path planning: Electrostatic potential field approach", Expert Syst.Appl,vol.100,pp.68-78,2018

Honors and Awards

- Received Iran Government scholarship for Master education
- Ranked 3th/15 in Worker robot filed on FIRA cup, 2016

Languages

- Persian: Native
- Azerbaijani: Native
- English: Professional

Certificate

IELTS: Band Score 6

References

Prof. Abdorreza Kashani-nia (Master advisor)

Assistant Professor, Department of Electrical Engineering, control systems, Malek-Ashtar University of Technology, Tehran, Iran

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Prof. Farhad Bayat (Bachelor advisor)

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