Hossein Zabihi kheibari

MSc Student of Robotics
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Education

- MSc of Robotics at Amirkabir University of Technology - beginning 2013
- Electronic Engineering at Shahan Danesh Institute of Higher Education 2009-2012

Academic Honors and Awards

- 3th place of applied research in the 14th Khwarizmi youth festival
- 1th place in the Amirkabir robotics and artificial intelligence festival and the 4th national Khwarizmi robotics competition
- 1th place of the 7th international RoboCup Iran Open competitions 2012
- Iranian Patent of robot balancing on a ball (Ballbot) (Domestic patent with the highest percentage of participation)
- Iranian Patent of position and distance measurement By a camera in different lighting conditions in the industrial property
- Iranian Patent of a module determines the angle in three axis by KalmanFilter and its application in computer game (Academic certified of professor Karrari, Amirkabir university of technology faculty and faculty members of Shahab Danesh Institude)
- Recommendation of professor. Karrari, Shahab Danesh Institute president and Amirkabir university of technology faculty
- 3th place in robotics competition of Isfahan university of technology in the automatic deminer robots league
- Participating in the international RoboCup Iran Open competitions 2011 in Demo league and automatic deminer robots league
- Accepted in the Amirkabir robotics and 2th national Khwarizmi robotics competition
- Accepted patents festival from the elite foundation

Publications

١- Constructing IMU Based On ADC and Sensors Calibration for Ballbot

RSI/ISM International Conference on Robotics and Mechatronics

٢- Timing Belt Gearbox in Ballbot Robot

RSI/ISM International Conference on Robotics and Mechatronics

Research Projects

- Constructing Ballbot robot for the first time in Iran and the fourth time in the world, adding features and functionality such as image processing and design and constructing IMU that is implemented by Kalman Filter
- Constructing IMU and INS
- Constructing the two-wheeled robot (segway) with the unique capabilities and remote control and etc.
- Constructing intelligent robot with machine vision capable of detection feature and geometric shapes of different colors
- Construction of three automatic deminer robot with full vision control
- Construction of snake robot with full vision control
- Sound processing by microcontroller and recognition of several words in order to control home devices with sound
- Construction of line follower robot using vision
- Designing distance metering by laser and utilizing image processing algorithms
- Construction of ultrasonic distance metering with 10 meters range centimeter accuracy
- Implementing Kalman filter on AVR microcontroller in order to angles estimation by rate gyroscopes and accelerometers
- Working with DSP processor
- Construction of capacitance touch sensor
- Recognition of some human hint by utilizing image processing algorithms
- Depth image analyzing by stereo camera
- Applying different vision project by OpenCV library

Teaching Experiments

- Teaching microcontroller lab and robotic lab in Shahab Danesh Institute of Higher Education

- Student courses: C language programming – Microcontroller – Image processing
- Teacher assistant in some courses

Current research and working projects

- Constructing the first one wheel @home robot
- Dynamic modeling and controlling humanoid robot

Computer and Programming Skills:

- Expert of designing and programming in C with AVR with over 100 succesfull different projects
- **Engineering Software**: Matlab and Simulink, PSpice, OrCAD, Maple, Mathmetica Catia, Adams, Proteus, Althium Designer, Labview, CodeVision, Atmel Studio, AWR, Webots
- **Programming Languages:** C/C++/C#, Basic,Visual Basic, Assembly (8051), pascal, working with OpenCv Library
- **Operation System:** Windows, Linux.