Shan Khan

Visit my webpage to see projects:
https://shankhan247.github.io/SK-portfolio/

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Education

Northwestern University, Evanston IL   Sep. 2019-Dec. 2020
    Master of Science in Robotics
    GPA 3.20/4.00

University of Illinois at Chicago (UIC), Chicago IL   Aug. 2014-May 2018
    Bachelor of Science in Bioengineering
    GPA: 3.95/4.00

Work Experience

ADM Diagnostics, Inc., Northbrook IL   Oct. 2018-Sep. 2019
Software Quality Engineer
- Developing FDA documentation for submission/approval of a software-based medical device
- Assisting in software development of an early stage Alzheimer's detection algorithm

Endotronix, Inc., Lisle IL   May 2017-Aug. 2017
Research & Development – Systems Engineer Intern
- Developing FDA system-level design input documents such as performance specifications (PS), marketing requirement specifications (MRS), and risk assessments (DFMEA/FMEA/SWFMEA) for a pulmonary artery sensor system

Skills

Programming
- Python, C/C++, C#, MATLAB, HTML, CSS, Lisp, Robotic Operating System (ROS)
- Implementing machine learning and computer vision methods from scratch

Tools
- 3D printing software (ie Ultimaker Cura) and CAD (SolidWorks, NX)
- Remote repositories/version control (git/github), Linux OS

Design
- Electrical circuit fabrication including microcontrollers, peripherals (motors, sensors, etc.), PCBs, and analysis tools (oscilloscope, LABVIEW)
- Mechanical elements design (shafts, gears, springs, belts, bearings)

Quality Control
- FDA risk based documentation: failure mode and effects analysis (FMEA), hazard analysis, corrective/preventive action
- FDA product based documentation: standard operating procedures (SOP), MRS, PS, design traceability matrix (DTM)

Projects

Fluidic Fabric Muscle Sheet   Mar. 2020-Nov. 2020
- Curated an inexpensive soft actuator that can be used in applications within soft robotics
- Actuator comprised of layers of fabric housing soft tubing that is hydraulicly powered

Don't Run Out Of Oxygen   Jan. 2020-Mar. 2020
- Created a game using the Unity engine, which is inspired by the indie game *Lovers in a Dangerous Spacetime*
- Programming was done in C# and integrated game with xbox/ps4 controllers

The Mighty Sawyer   Nov. 2019-Dec. 2019
- Programmed a Sawyer robot to play cornhole against a human opponent using ROS
- Tasks included computer vision, robot manipulation, simple state machine, and gazebo simulation

youBot Mobile Manipulator Simulation   Nov. 2019-Dec.2019
- Programmed and simulated the KUKA youBot using python and the V-REP simulator
- Tasks included trajectory planning, odometry during chassis movement, and feedback control to perform the desired task

Communicator for Locked in Syndrome Patients   Mar. 2018-May 2018
- Developed and programmed a circuit to read and amplify EOG signals in real time, and interpreting eye movements into a series of letters, numbers, and phrases that appeared on a display

Lie Detector   Feb. 2018-Mar. 2018
- Fabricated a PCB that quantifies the degree of perspiration of a user's fingertips and relay this to a series of red and green LEDs