Stephen Johnson

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EDUCATION

Tennessee Technological University   BSc Mechanical Engineering

1. Areas of Concentration: Robotics, Mechatronics, Finite Element Analysis, Advanced Finite Element Analysis and CAD

Skills

Programming:	Robotics:	Embedded:	Design:	Web Dev:
Matlab	ROS	Arduino	PTC Creo	Node
C/C++	OpenRAVE	ARM	SolidWorks	React
Python	PCL	PIC	Inventor	Angular
Java	OpenCV	Dragon12	Blender	D3
OpenGL	Machine Learning	Android	ZBrush	ThreeJS
CUDA	Lidar		FEA - ANSYS	JQuery
	IMU		Star-CCM+	

General Dynamics Westminster, MD June 2017 – Feb 2018 (Contract) Robotics Software Engineer

1. Created tools in ROS for reading a radar, GPS, and IMU vehicle sensors.

2. Created a tool for plotting vehicle positions and orientation using google maps.

3. Created a pedestrian and vehicle detection system using YOLO and Caffe SSD.

4. Worked on video system software for reading various cameras, such as, USB or GigE. Modified the software to accept thermal cameras and optimized the code to run on an embedded VersaLogic Osprey board.

5. Worked on an overlay for Android device software for navigating a vehicle.

6. Modified video software to read 6 cameras for a head mounted tracking device for 360 degree viewing.

7. Created a git deployable package and a RPM package for deploying camera system to many Osprey EPU boards.

NuSpatial Huntsville, AL March 2016 – March 2017   Robotics Software Engineer

1. Created interface for lidar scans and line extraction using NodeJS, ReactJS, ROS, roslibjs, D3, and ThreeJS.

2. Created user login and separate user GPS geolocation maps for Android using Meteor with AngularJS.

3. Used ROS, Boost, and PCL to extract 3D lidar scans, as well as, tools for processing PCD files and voxel filtering.

4. Used Python, Numpy, and Scipy to extract lines and covariance from lidar scans.

 5. Used Hough transform algorithms to automatically find lines in scans for use in sensor fusion for
SLAM and localization.

6. Created a feature extraction application to Revit, using PCL, Qt5, and OpenCV. Ability to select
features in a point cloud and extract them to a modeling program.

7. Created an Android app to monitor ROS lidar publishes and draw OpenGL 2 contexts for viewing the
point cloud and occupancy grid.

8. Worked on virtual reality environments using Unity to model and display rooms in GearVR and HTC Vive.

Universal Logic   Nashville, TN   Feb. 2015 – March 2016 Robotics Engineer

1. Created kinematic simulations in OpenRAVE with Python and C++.

2. Designed mechanisms and created work cells in AutoCAD, Keyshot, and SolidWorks.

3. Created renders for presentations and for use in articles to be shown in articles.

4. Programmed PLCs, Motoman Robots, and ABB Robots.

5. Designed and created a robotic cell and end of arm tool for a demo system for Yaskawa.

6. Passed 3 FAT projects in the year I worked there and one project 3 months after it had been ongoing for over a
year.

7. Utilized FEA to aid in the design of end effectors and robot cells.

Bridgestone Americas   McMinnville, TN   2011 – 2012   Mechanical Engineering Co-op

1. Edited and completed AutoCAD drawings for projects and plant expansion.

2. Utilized LISA to complete FEA thermal analysis on heated cutting mechanisms.

VOLUNTEER
WORK

1. Worked with Sparta Bots FIRST Robotics team that made it to 2016 Nationals after coming in 1st place at
State and Regionals.