Kritika Iyer

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SUMMARY: Software Engineer with 4 years industry experience in robotics and medical devices. Looking to impact the medical device industry by creating products that help patients and physicians

SKILLS

Software and Tools: Git, ROS, Gazebo, OpenCV, OMPL, Simulink, Qt ,Solidworks
Programming Languages: C++ (11, 17) , Qt, C, Python, MATLAB, C#(.NetFramework)
Machine learning packages: Theano, Keras, Tensorflow, Scikit-learn, AWS(RoboMaker)
Boards: QNX, Arduino, PIC, Raspberry Pi, JetsonTX2

EXPERIENCE

Medacuity software LLC , Westford MA, USA
Associate Software Engineer (Sept '19—Dec '20) **Staff I SE** (Jan '21—Aug'22) **Staff II SE** (Sept '22—Present)

- Received **award for honoring commitments** to clients by going above and beyond helping reach important deadlines
- Implementing Robotic Controls in **C++, Qt, C#, C** using **QNX** for medical devices such as catheters and angiography equipment meant to help reduce surgical risk by 25%
- Assisted 2 big medical device companies that have gone on to get FDA approval for their robots and successfully performed surgeries

FESTO Corporation - Software Engineer, Billerica, MA, USA (June '18—Sept '19)

- Developed drivers in C# and LabView for communication via **Ethernet, RS232 and, Serial port** between the UI and the Controller
- Developed applications using Programmable Logic Controllers (PLCs) in Codesys to control various devices like pipettes and gantries
- Designed and coded Graphical Interfaces using C#(.NET framework) for products and test benches that reduced testing time by 30%

Internship: Persimmon Technologies, Wakefield , MA, USA (July '17—Aug '17)

- Designed a test bench for Encoders in Solidworks with 25 individual components and 221 assembled components
- Performed trade off analysis for cost and effective design and toleranced parts to ensure proper assembly of the testbed

Internship: Maruti Suzuki India Ltd, Gurugram, India (May '15—Jun '15)

- Studied trajectory controllers for 6 DOF Fanuc, ABB industrial robots used in car manufacturing
- Designed ladder logic for bottle filling station involving complex pick,place and fill operations using Siemens PLC

EDUCATION

Master of Science, Robotics Engineering Aug '16—May '18
Worcester Polytechnic Institute, (WPI), Worcester, MA GPA: 3.8/4.00

Bachelor of Technology, Mechatronics July '12—May '16
Shanmugha Arts, Science, Technology and Research Academy (SASTRA), India GPA: 7.5/10.0

PROJECTS

Emotion and Attention level detection using deep learning (Aug '17—May '18)

- Detected emotions and attention level in real-time video captured by a socially assistive robot (PABI)
- Trained on Kaggle data set using **OpenCV** to get an accuracy of **68.5%**, highest recorded for this data set: **71%**
- Extracted features from faces and trained a model to detect the emotions to an accuracy of **85.19%** on real time videos

Mapping and Motion Planning for RC Car (Jan '17—May '17)

- Implemented **A*, RRT*, and ARA*** algorithms in C++ for motion planning through an obstacle course
- Compared optimality, completeness, space and time complexity in 3 different Gazebo worlds using ROS to get a better understand of the algorithms

Motion compensation during surgery (Oct '16—Dec '16)

- Implemented motion compensation techniques using Extended Kalman Filter(EKF) and Fourier series
- Visualized the performance using Rviz daVinci model by simulating irregular motion of tissue in Gazebo using ROS

Kiosk for Autistic Children (Oct '15—June '16)

- Designed and fabricated a gaming kiosk with various motor skill enhancement tasks integrated into it
- Controlled the system to track the speed of performance, gripping methods and overall improvement
- Programmed a PIC16F877A and got input from various sensors to record improvement for trials

HOBBIES

• Sewing • Swimming • Board games