GIRISH KUMAR KANNAN

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SUMMARY

An M.S.Cp.E graduate with 3 years of professional computer engineering experience and a wide range of technical skills. Focused in Robotics, Computer Vision and Machine Learning. Excels at Programming, Circuit Design and Sensors. Versatile and hardworking, passionate towards contributing to a team to accelerate outcomes and goals. Takes personal responsibility and accountable to assigned tasks. Motivated towards developing quality technologies, systems and processes. Critical thinker, detail oriented & fast problem solver.

EDUCATION

University of Central Florida, Orlando, Florida, USA. **August 2016 – May 2018**
Master of Science in Computer Engineering CGPA: 3.5 / 4.0

Related Coursework: Advanced Artificial Intelligence, Machine Learning, Intelligent Systems, Computer Vision, Control Systems, State Estimation, Digital Signal Processing, Adaptive DSP, Neuroscientific Systems, Modeling and Simulation.

Related Projects:

- Prediction & Signal Smoothening w/ Kalman Filter: Engineered robot & algorithm to obtain Magnetic Heading from Digital IMU using Arduino with C/C++ program.
- Occupancy Grid-based 2D-SLAM Robot: Deployed A-Star Search and Reinforcement Learning techniques to navigate a robot that can Simultaneously Localize and Map a quasi-stochastic region using Matlab, C/C++ and Python.
- Multi-Detection Computer Vision : Developed a set of Computer Vision algorithms to make a webcam detect hand gestures as mouse commands and perform Optical Character Recognition as well, on a real-time basis.
- Mini-Projects in Computer Vision: Implemented and presented common Computer Vision Algorithms and Convolutional Neural Network based Image and Action Sequence Classification – all from scratch using Scikit-Learn and Tensorflow in Python.
- Programmed and compared Machine Learning algorithms to datasets to understand the efficiency of every algorithm using R and Python (numpy, scipy, pandas, seaborn and scikit-learn).
- Designed and demonstrated various Signal Filters and Processing techniques to analyze the efficiency of each design using Matlab.

SRM University, Chennai, Tamil Nadu, India. **August 2011 – May 2015**
Bachelor of Technology in Mechatronics CGPA: 8.9 / 10.0

Related Projects:

- Autonomous Robot Swarm for Goal Searching: Designed an Arduino-based three-agent swarm that uses Alpha-Beta Coordination Algorithm using C/C++ for Goal Searching and Convergence for applications like search and rescue and resource foraging.
  Related Publication: "*On the Estimation of Optimal Robot Heading using Savitzky-Golay and Kalman Filters"*, International Journal of Robotics and Automation, 2015.
- Gesture Controlled Mouse: Designed an Arduino-based Wireless Gesture-controlled Mouse using Inertial Sensor to aid people with limb-disabilities. Built and programmed an interface that translated hand gestures to cursor actions on a computer using C/C++.

TECHNICAL SKILLS

Operating Systems: Windows (10+ years), Linux (3+ years – Ubuntu, Raspbian, Debian distros.)
Programming Languages: Python (numpy, scipy, matplotlib, pandas), C, C++, Matlab, SQL, [Java, C#, HTML, R]
Applications: OpenCV, TensorFlow, Tkinter, Git, Spyder, Jupyter, Microsoft Office, [ROS, Cmake, PyQt, Simulink]

WORK EXPERIENCE

Roboticist / Robotics Engineer, Quartile 3 Robotics, Miami Beach, Florida, USA. **Nov 2018 – Present**

- Developed a program that will help take Restaurant orders using Speech Synthesis and Facial Recognition in Python. Implemented Google Cloud Speech to Text and Face Recognition using OpenCV, Dlib and Deep Neural Network Model.
- Developed GUIs to actuate a Humanoid Robot by a Remote User, controlled through intranet & internet with Python and Tkinter.
- Developed Communication Protocol for ULoRa Transceivers with Python. Produced error-free and loss-less transfer.
- Developed API to interface a GPS RTK device in Python & C/C++. Decoded, interpreted and reformatted incoming binary data.

DSP Engineer (Volunteer-Associate), Parseval LLC, Orlando, Florida, USA. **May 2017 – April 2018**

- Developed a project that saves trapped lives in a vehicle endangered by unsafe temperatures. Fabricated and designed circuit boards, assembled, analyzed and tested the efficacy of the design. Programmed using C/C++ and Python.
- Designed and developed advanced DSP algorithms, signal communication strategy and device communication topologies.
- Collaborated across disciplines to make user-friendly amplifier control systems, effectively automating smart soundscapes.
- Lead engineering teams of up to 10 people, conducted interviews and made important decisions.