# 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, Signal Processing and Machine Learning. Excels at Programming, Electronic Circuit Design and Sensors/IoT. 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.

## 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.
- 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 Occupancy Grid model.
- 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 several Machine Learning algorithms to datasets to understand the efficiency of every algorithm.
- Designed and demonstrated various Signal Filters and Processing techniques to analyze the efficiency of each design.

**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 a limited three-agent based swarm that uses Alpha-Beta Coordination Algorithm 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 a 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. Later applied in industry.

## TECHNICAL SKILLS

Operating Systems: Windows, Linux (Ubuntu, Debian, Raspbian)
Programming Languages: Python, MATLAB, C, C++, SQL, [ Java, C#, HTML, R ]
Applications: OpenCV, TensorFlow, EAGLE (PCB Design), SolidWorks, Git, [ ROS, Simulink, LabVIEW, Microsoft Office ]
Test Equipment: Multimeters, Oscilloscopes, Signal/Function Generators, Power Supplies, Precision Toolsets, Soldering, Wiring

## WORK EXPERIENCE

**Roboticist / Robotics Engineer, Quartile 3 Robotics,** Miami Beach, Florida, USA.    **Nov 2018 – Present**
- Currently developing a mobile app using Python and Kivy UI Development framework that will facilitate restaurant orders using Speech Synthesis and User Input – using Python and Kivy UI Development framework.
- Developed a program that will help take Restaurant orders using Speech Synthesis and Facial Recognition in Python.
- Designed & developed GUIs to actuate a Humanoid Robot by a Remote User, controlled through intranet & internet.
- Developed Communication Protocol for Ultra Long Range Transceiver pair. Produced error-free and loss-less transfer.
- Developed API in Python to interface a GPS RTK device. Decoded, interpreted and reformatted incoming binary data.

**Computer Engineer Intern, Parsound,** Orlando, Florida, USA.    **Aug 2018 – Jan 2019**
- Lead engineering teams of up to 10 people, conducted interviews and made important decisions.
- 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.

**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. Procured necessary components for compact fabrication, designed circuit boards, assembled, analyzed and tested the efficacy of the design.
- Designed and programmed automated microphone stand to perceive soundscape of a room. Procured components, created CAD models and 3D printed, programmed device control, tested product design and evaluated working efficiency.