**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, Data Engineering and Database Systems. 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. Quick learner and 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 A.I., Machine Learning, Intelligent Systems, Computer Vision, Digital Signal Processing.

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, Debian, Raspbian)

Programming Languages: Python (NumPy, SciPy, Pandas, MatPlotLib, Seaborn), Matlab, C, C++, SQL, [ Java, C#, HTML, R ]

Applications: OpenCV, TensorFlow, Tkinter, PyQt, Git, Ms Office, Libre Office

WORK EXPERIENCE

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

* + Developed a program with GUI that will help take Restaurant orders using Speech Synthesis and Facial Recognition in Python.
  + Developed GUI to actuate a Humanoid Robot by a Remote User, controlled through intranet & internet using Python and Tkinter.
  + 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.
  + Developed APIs for all the above projects to handle automated data interaction between local and cloud SQL database servers.

**Computer Engineer Intern, Parsound LLC,** 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.
  + Developed a program in Python to handle automatic data exchange between a software and a data file. Collected, reorganized, transformed and exported the data file to be imported directly into the software. Handled data errors and corrections.
  + 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. Fabricated and designed circuit boards, assembled, analyzed and tested the efficacy of the design. Programmed using C/C++ and Python.
  + Designed and programmed automated microphone stand to perceive soundscape of a room using Matlab. Procured components, created CAD models and 3D printed, programmed device control, tested product design and evaluated working efficiency.