

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 Data Analysis/Visualization, Circuit Analysis, Sensors/IoT and Programming. Versatile and hardworking, passionate towards contributing to a team. 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 Smoothing 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 interfacing Matlab, C/C++ and Python together.
- 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, matplotlib, 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, pyserial), C, C++, Matlab, SQL, [R, Java, HTML, C#]

Applications: OpenCV, TensorFlow, Tkinter, 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

Robotist / 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 GUI with Python and Tkinter to actuate a Humanoid Robot by a Remote User, controlled through intranet & internet.
- Developed APIs in Python and C/C++ to interface GPS RTK device and to communicate with ULoRa Transceivers.

Computer Engineer Intern, Parsound LLC, Orlando, Florida, USA.

Aug 2018 – Jan 2019

- Developed advanced DSP algorithms, signal communication strategy & device communication topologies with OTA updates.
- 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.

DSP Engineer (Volunteer-Associate), Parseval LLC, Orlando, Florida, USA.

May 2017 – April 2018

- Developed a “Smart-Car” that saves trapped lives endangered by unsafe temperatures. Fabricated and designed circuit boards and programmed using C/C++ and Python. Interfaced the device to CAN bus to start the car and activate air-conditioner.
- Designed and programmed automated microphone stand to perceive soundscape of a room. Programmed device control in C/C++ and Visualized in Matlab, tested product design and evaluated working efficiency.
- Built & maintained computers, fixed operating systems & set up complex development environments to support dev team.