

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 Artificial Intelligence, Computer Vision and Machine Learning. Excels at Sensors/Perception, Programming, Data Analysis/Visualization and Circuit Analysis. 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:

- Occupancy Grid-based 2D-SLAM Robot: Engineered a robot that can autonomously navigate within a specified region.
 - Used Digital IMU for obtaining distance and angle for odometry and pose estimation with Kalman filtering using C/C++.
 - Implemented navigation and path planning using A-star and Reinforcement learning using Python
 - Implemented simple SLAM with sonars and servomotor to scan the semi-random region of work and mapped it in Matlab.
 - Communicated robot location using RF transceivers to computer, successfully interfacing C/C++, Matlab and Python.
- Developed a program in Python and OpenCV to track hand gestures and converted them to move cursor movements.
- Image and Action Sequence Classifier using CNN: Modified and trained a neural network from scratch using Scikit-Learn & Tensorflow in Python.
- Analyzed and compared Machine Learning algorithms to understand the efficiency of every algorithm using R and Python (numpy, scipy, matplotlib, pandas, seaborn and scikit-learn). Visualized, pruned & extracted the data with most correlation and significance.
- 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.
- Gesture Controlled Mouse: Designed an Arduino-based Wireless Gesture-controlled Mouse using Digital IMU 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, Git, SQL, [R, Java, HTML, C#]

WORK EXPERIENCE

Robotician / 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 Speech Synthesis using Google Cloud Services and Processed Text using NLP with NLTK library.
 - Implemented improved Face Recognition using OpenCV, Dlib and Deep Neural Network Model.
- Developed GUI to actuate a Humanoid Robot by a Remote User, controlled through intranet & internet.
 - Used Python and TkInter to create the GUI with multithreaded functions and classes.
 - Used publisher/subscriber methods in ROS to actuate the robot and get positional feedbacks.
 - Setup VPN to control the robot from another place for private access. Wrote TCP/IP based commands in Python as API.

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.
 - Created a device that would communicate with a wearable device using specific sound beep patterns.
 - Attached the device to the CAN bus and communicated with the system to start the vehicle and activate the air-conditioners.
- Developed advanced DSP algorithms, signal communication strategy & device communication topologies with OTA updates.
- Designed and programmed an automated microphone stand to perceive soundscape of a room. Implemented Arduino to actuate the stand using Servomotors. Programmed in C/C++. Created a map using Matlab to visualize the soundscape of the room.
- Lead engineering teams of up to 10 people, conducted interviews and made important decisions.
- Built, maintained & patched computers and cables, installed & fixed operating systems, set up complex development environments to support development team.