GIRISH KUMAR KANNAN

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SUMMARY & OBJECTIVE [H1-B Visa Sponsorship Required]

A Master's degree graduate encompassing a wide range of technical skills. Primarily focused towards Robotics, Automation, Mechatronics, Signal Processing, Computer Vision and applying Machine Learning concepts in related fields. Experienced in Programming Languages, Electronic Circuit Board Design and Analysis. Versatile and hardworking, passionate towards working in a team to accelerate outcome-based engineering goals. Accountable and responsible with assigned tasks. Motivated towards designing and developing quality technologies, systems and processes that further our collective interests.

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.
- 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.
- Only student in the program to conduct a live Advanced DSP project presentation in lieu of internet PowerPoint submission.

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 (Raspbian, Debian, Ubuntu, etc.)
- Programming Languages: Python, MATLAB, C, C++, [Java, C#, SQL, HTML, R]
- Applications: OpenCV, TensorFlow, EAGLE (PCB Design), SolidWorks, [Simulink, LabVIEW, M/s Office, Project, Visio, Git]
- Test Equipment: Multimeters, Oscilloscopes, Signal/Function Generators, Power Supplies, Precision Toolsets, Soldering/Wiring

WORK EXPERIENCE

- **Adjunct Professor (EET), Valencia College (West)**, Orlando, Florida, USA. **Aug 2018 – Present**
  - Teaching "Fundamentals of AC Circuits" course for students of Electrical Engineering Technology.
- **Computer Engineer Intern, Parsound**, Orlando, Florida, USA. **Aug 2018 – Present**
  - Develop advanced DSP systems for impact within soundscape and noise control industry.
  - Design and develop algorithms, signal communication strategy and device communication topologies.
  - Collaborate 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.
  - Built & maintained computers, fixed operating systems & set up complex development environments to support dev team.
  - Demonstrated and deployed several Signal Processing methods and techniques on projects.
  - Researched and implemented Sound Source Localization by Arraying Microphones.