Nanda Kishore Vasudevan

http://nanda-kishore-v.github.io | nandav@seas.upenn.edu | 267.901.5035

LINKS

LinkedIn: nanda-kishore-vasudevan
Github: nanda-kishore-v

COURSEWORK

GRADUATE

- Introduction to Robotics
- Computer Vision and Computational Photography
- Control and Optimization with Applications in Robotics
- Learning in Robotics
- Model Predictive Control

UNDERGRADUATE

- Pattern Recognition
- Control Systems
- Modern Control Systems
- Neural Networks
- Image Processing

ONLINE COURSES

- Machine Learning
- Reinforcement Learning

SKILLS

PROGRAMMING

Over 5000 lines:
Python • MATLAB • C • C++
Over 1000 lines:
Assembly • Arduino
Familiar:
CSS • PHP • JavaScript • HTML • Shell

LIBRARIES

ROS • OpenCV • Keras • PyTorch

SOFTWARES

Gazebo • Git • Simulink • Drake • PSpice

ACHIEVEMENTS

- Gold medalist in Electrical and Electronics Engineering at NIT Trichy
- One of the 19 students selected from India for Viterbi-India Summer Research Program '17
- Selected for DAAD-WISE scholarship '17
- Recipient of Science Academies' Summer Research Fellowship '16

EDUCATION

UNIVERSITY OF PENNSYLVANIA

MSE in Robotics — Expected May '20
Cum. GPA: 4.0 — Philadelphia, PA

NATIONAL INSTITUTE OF TECHNOLOGY, TRICHY

B.Tech. in Electrical & Electronics Engineering — Aug '14 - May'18
Cum. GPA: 9.72/10.00, Gold Medalist — Trichy, India

RESEARCH

AUTONOMOUS DRIVING USING F 1/10TH CAR

Graduate Researcher — Jan '19 - Present
mLab, UPenn — Philadelphia, PA

- Working on implementing MPC for trajectory tracking on F 1/10th car using a Jetson TX2 module. Eventually, the algorithm will be implemented on Prius.
- Localization of the F 1/10th car is done using particle filter.

STABILITY ANALYSIS OF BIPEDAL ROBOT

Graduate Researcher — Jan '19 - Present
DAIR Lab, UPenn — Philadelphia, PA

- Working on quantifying the stability of bipedal models using Sum-Of-Squares (SOS) optimization.
- Simultaneously working on the control of the full-scale model using simplified models of bipeds.

INTERNSHIPS

LIGHT WRITING WITH CRAZYSWARM

Viterbi-India Summer Research Program — May '17 - July '17
University of Southern California — Los Angeles, CA

- Developed an algorithm to autonomously perform light painting by a swarm of Crazyflie 2.0 quadrotors for any given font and text

STRATEGY FOR EVADER IN PURSUIT EVASION USING REINFORCEMENT LEARNING

Science Academies' Summer Research Program — May '16 - July '16
IIITDM Jabalpur — Jabalpur, India

- Implemented Q-learning coupled with neural network in keras for the evader in grid-based pursuit evasion games and obtained a success rate of 92.4% for the evader in simulations

MAJOR PROJECTS

ROBOTICS AND MACHINE INTELLIGENCE

Vice president & Member — August '15 - May '18
NIT, Trichy — Trichy, India

- Soccer Robots: Built, fabricated and controlled four soccer playing robots in accordance with RoboCup Small Sized League (SSL) Rules
- Mobile Robot Development Platform: Developed a research platform using low-cost sensors like Kinect, IMU and wheel encoders endowed with the ability to perform SLAM (Simultaneous Localization and Mapping) indoors