Kashish Jain

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TECHNICAL SKILLS

Languages & Tools: Matlab, Simulink, Embedded C, Arduino IDE, Python, Visual Studio, Linux, Xilinx ISE, Code Blocks, Autodesk Eagle, Multisim, LT Spice, Proteus, MSP430, Energia, Verilog, CLIPS, Fuzzy CLIPS, LaTex, Git, MS Office, CAN Protocol.

WORK EXPERIENCE

Intern – Project Engineer, Robotronix Pvt Ltd   Jan 2018 - June 2018
- Worked on IOT based projects such as home automation systems using Matlab, Simulink and microcontrollers.
- Deployed sensors and ICs to automate household circuits using Embedded C and Matlab.
- Designed PCBs and circuits for embedded systems and robots using Autodesk Eagle, Proteus and Multisim.
- Performed testing & debugging of the system using lab equipment such as oscilloscopes, signal generators and DMM.
- Served as a contact point between clients and engineers to negotiate design specifications and meet the deadlines.

Technical Event Experience

SAE-NIS Effi-Cycle   Jalandhar, India
- Designed the Electrical System of the Efficient-Cycle for the college team.
- Installed battery, Brushless DC motor and motor controller to assist the driver in pedalling.
- Tested the vehicle on different terrains with varying battery charge levels to determine the behaviour of the system.

SAE-INDIA BAJA   Chandigarh, India
- Lead the team to design the Electrical System of the Off-Road Vehicle.
- Work involved deployment of the brake lights and a safety kill-switch on the vehicle.
- Tested working of the kill-switch for different scenarios to ensure safety of the driver and the vehicle.

PROJECT EXPERIENCE

Automatic Ticket Generation System
- Developed a model to penalize the vehicles not stopping behind the stop line when traffic light is red.
- Deployed Radar and Camera to detect and capture the vehicles to be penalized using Arduino microcontroller and Matlab.
- Work involved: Proximity detection, Image Processing, Data Matching, Data Extraction.

Vehicle Monitoring System
- Designed a system to transmit various parameters of the vehicle to the destination on real time basis using Arduino IDE.
- Parameters were Location, Speed and Fuel Level of the vehicle using GPS, GSM and ultrasonic sensors.
- Work involved: Sensor fusion, Real-Time data collection and transmission when requested.

Underwater Energy Harvesting
- Derived heuristics for Harvesting energy underwater successfully using solar panels.
- Performed rigorous experimentation and testing for different water levels for both clean as well as murky water.

Artificial Neural Networks
- Designed a Machine Learning Feed Forward network for classification between AEP and non-AEP data.
- Dataset was unbalanced with 27 dimensions of 83 AEP data set and 2400 non-AEP dataset.
- Work involved: Epoch training, use of bias and momentum in a neural network.

Autonomous Driving
- Developed a prototype of an SAE level 2+ Autonomous car using Matlab and Arduino microcontroller.
- Implemented state estimation, Stanley Controller and Deep Learning for lane keeping, steering control.
- Work involved: Kalman filtering, Lane tracking, Edge detection, Camera Calibration and UDP Communication.

Pattern Recognition
- Implemented supervised and unsupervised learning of the network using Matlab for 15,000 4-D datapoints.
- Developed Bayesian classifier, K – Nearest Neighbor approach, C-means algorithm to classify data into 3 different classes.

Signal Processing
- Compared the discretization methods of a signal using a low pass Butterworth filter.
- Bilinear Transformation and Impulse Invariance discretization methods were compared.

EDUCATION

Master of Science, Electrical and Computer Engineering   Aug 2018 - May 2020
Clemson University   Clemson, SC, USA

Bachelor of Engineering, Electronics and Communications   Aug 2013 - June 2017
Swami Vivekanand College of Engineering   Indore, MP, India

Relevant Coursework: Embedded Network Systems, Electrical Circuits(Analog & Digital), Microcontrollers and Microprocessors, Digital & Analog Communication, Smart Grids, Solar Cells, Analysis of Linear Systems, Knowledge Engineering (AI), Statistics, Analysis of Tracking Systems, Autonomous Driving Techniques, Pattern Recognition, Artificial Neural Networks, Digital Signal Processing