KEDAR SHRINIVAS REMANE

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EDUCATION

University of Colorado, Boulder- United States of America *Jan 2021 - Dec 2022*
Master of Science(M.S)- Electrical, Computer and Energy Engineering (LINCD) *GPA:3.94.*
Relevant Coursework: Deep learning, Machine learning, Modern Signal Processing, Digital Communication, Random Processes and Statistics, Information Technology and Coding, Data Science and Networks, Digital Control Systems, Project Management.
Savitribai Phule Pune University (Formerly: University of Pune) India *June 2014 - May 2018*
Bachelor of Electronics and Telecommunication Engineering *First Class with Distinction.*
Relevant Coursework: Artificial Intelligence, Soft Computing, Signal Processing, Digital and Analog Communication, Statistics, Micro-controllers and applications, Information Technology and Coding Techniques, Computer Networks,Control Systems, Industrial management.

TECHNICAL SKILLS

Programming Languages:	PYTHON, C/C++, JAVA, SQL, PL-SQL, HTML, CSS, JavaScript, Embedded C, VHDL, Verilog.
Software Tools :	MATLAB, PyTorch, PyCharm, TensorFlow, NumPy, Keras, OpenCV, Multisim, Analytics tools (PFMEA, DFMEA, PPAP, APQP),Anaconda Version Control(Git, Github), SciPy, Scikit-Image, Eclipse, AutoCAD, SOLIDWORKS, MS Office, Putty, Proteus 8,MPLAB IDE, Eagle EDA.
Protocols / Networks :	Bluetooth,IEEE 802 family, I2C,SPI, UART, Socket Programming, OSI Model, Link layer protocols (MAC), CAN, Network layer protocols (Ipv4, IPv6, ICMP), Transport layer network protocols(TCP,UDP), Application layer protocols (DNS, HTTP, SMTP, IMAP, RPC, DHCP), Unix administration, Network security and performance, VMWare, CISCO Packet Tracer.
Database :	OracleDB, MySQL, CRM, Tableau .
Microcontrollers :	Arduino UNO Rev 3, Raspberry Pi, Pic 8051, MSP430, Xilinx FPGA.

WORK EXPERIENCE

University of Colorado,Boulder-USA - *Graduate Student/Teaching Assistant* *Sept 2021- Present*
Working as a Graduate student assistant in the Electrical, Computer and Energy Engineering Department for Digital Logic Course and Principles of Digital Communication Graduate Course.
TATA Consultancy Services, Pune-India - *Subject Matter Expert* *Jan 2020- Nov 2020*
Worked as Subject Matter Expert (SME) for database operations for the project of creating a unified database during the merger of two major Telecom operators in India (Vodafone and Idea)
-Played a pivotal role in conducting brainstorming on defining system architecture.
-Monitored development activities and handle release and change management.
-Developed and circulated daily reports to management related to the health of the database system.
Solarich Systems (Startup),Pune-India - *Product Engineer* *Aug 2018- Dec 2019*
Responsible for introducing a new product feature that increases the efficiency of solar plants for industrial as well as non-industrial applications
-Part of the team working on developing IoT derived PoC to help reduce downtime and losses due to device failures.
-Developed algorithm to introduce smart features like future generation forecasts in solar plants using historical data

PROJECT[S] AND PUBLICATION[S]

[1] Forecasting Seismic Moments for Earthquake Damage Assessment(EDA): *[UCB-March 2022]*
-Feasibility study of EDA and forecasting surface seismic moment of an earthquake of a specific intensity by simultaneous implementation of a Recurrent Neural Network(RNN) and a feed-forward network.
-Comparing the efficacy of the Long Short-Term Memory(LSTM) network to that of a Dense Neural Network (DNN).*(IEEE paper currently under Development).*
[2] S. Bhattacharya, K. Remane, B. Kindel, G. Tang, "**Spectral Super-Resolution for Hyperspectral Image Reconstruction Using Dictionary and Machine Learning,**" **2022 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Kuala Lumpur, Malaysia, 2022, *submitted for review*.** *[UCB - November 2021]*
[3] Independent study- WAVE Technology : *[UCB-April 2021]*
- State-of-the-art solution to Intelligent transportation System, Wireless Access in Vehicular Environments (WAVE) technology [IEEE 802.11p standard] anticipated to be widely applied in the near future to radically improve the transportation environment in the aspects of safety, intelligent management, and data exchange services.
-Next generation Dedicated Short Range Communications (DSRC) technology, which provides high-speed V2V and V2I data transmission.
[4] Recognition of handwritten MODI-LIPI characters using transfer learning : *[MIT-May 2018]*
- Created database and implemented Convolutional Neural Network [Alexnet] for extraction Region of interest (ROI) from the image of inventory, Joint-spectral-spatial features from HSI's and estimation of centroids using Connected Component Analysis (CCA)
- Used iterative re-weighting heterogeneous transfer learning (IRHTL) framework to learn a common space for the source and target data and conduct a novel iterative re weighting strategy to re-weight the source samples.
[5] KPIT SPARKLE PROJECT:Advanced vehicle overtake assistance system: *[MIT-October 2017]*
- Created a system based on vehicle to vehicle (V2V) communication and Conventional Neural Network for aiding the vehicle driver while overtaking another object or vehicle on the road safely.
- Dedicated short-range communications (DSRC) with 5.9 GHz band with a bandwidth of 75 MHz and an approximate range of 300 m was used for communication.
- The rear vehicle uses Automatic Licence Plate Recognition (ALPR) with the help of the dashboard camera of the car to establish a connection with the front vehicle by using number plate number as a communication address.
[6] HACKATHON PROJECT:Vehicle Over-speed detection system : *[MIT-May 2017]*
- Developed an Image Processing and Neural network based system that calculated the speed of moving vehicles using the video feed relayed by the traffic cameras.
- Identifying contours of the moving vehicle and developing an algorithm to track the centroid of the contours across multiple frames.
- Developed automated e-ticketing system in-case of of violation of the speed limit.
[7] Density based smart traffic and street lighting system : *[December 2017]*
- Design and Implemented a traffic congestion control system to control the traffic based on its density.
- Devised priority based sensory algorithm integrated with IR sensors and micro-controller to decide when one lane should be green.
- The system was simulated in Proteus hardware to monitor the performance of the proposed model embedded with Keil µvision software