Rohit Rangwani
https://rohitrangwani.github.io

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EDUCATION
Master of Science, MS | Texas A&M University, College Station, TX | May 2020
Electrical Engineering, GPA: N.A. (first semester student)
Courses - Pattern Recognition, Probabilistic Graphical Models, Neuro-electronics
Bachelor of Technology, BTech | National Institute of Technology, Warangal, India | July 2012- May 2016
Electronics and Communication Engineering, GPA: 7.88/10

WORK EXPERIENCE
Student Technician | Integrated Neuro-Prosthetics Labs, Texas A&M University | Aug 2018
- Engaged in research focused on sensory feedback for robotic-human interfaces leading to potential publications

Engineer | Qualcomm, Hyderabad, India | July 2016 - Aug. 2018
- Developed & supported NFC (Near Field Communication) on Android for different platforms utilizing C/C++/Java for support across layers (driver, middleware, etc.)
- Individually owned and developed various test utilities (factory testing, etc.) in C and test automation scripts in python saving significant repetitive developer test effort and easier factory testing
- Successfully completed bring-up of NFC on more than 6 different platforms/targets (few achieved in record times)
- Received 6 **Qualstars** (Qualcomm's Recognition Program) for critical contributions to different projects

Research Assistant | MuSAE Lab, INRS-EMT, Montreal, Canada | May - July 2015 (funded under MITACS GRI award)
- Utilized NumPy, sklearn, etc. in python to design a self-paced Motor Imagery BCI system which can be used for real-time application without need of extensive training or high computation power
- Hacked an Emotiv Epoc+ for EEG acquisition in sensorimotor area for easier online application

SKILLS
Programming skills - C, C++, Python, Java, MATLAB, etc.
API/Libraries - NumPy, SciPy, scikit-learn, pandas, TensorFlow, keras, matplotlib, cuda, etc.
Software Packages - MATLAB/Simulink, Xilinx ISE, OrCAD Capture/PSpice, NI Multisim, Processing, etc.
Hardware Skills - ARM based MCUs/MPUs, Arduino, Raspberry Pi, Particle Photon, TI MCUs (CC3200, MSP430), EFM32 Zero Gecko & similar dev boards, PCB designing (EAGLE cad), etc.

RELEVANT RESEARCH/PROJECTS
Quick Draw! Doodle recognition | Dec 2018 - course project for Pattern Recognition class
- explored and used RNNs(LSTM) and CNNs (MobileNet, DenseNet) to develop a sketch recognizer for noisy labelled data from the Quick Draw! dataset and obtained top3 accuracy of ~92.1 using CNNs

Inference for diagnosing congenital heart disease | Dec 2018 - course project for Probabilistic Graphical Models
- implemented Pearl's Message passing algorithm for Bayesian network
- inference used on CHILD dataset to obtain probabilities of sickness and diseases based on medical reports

Keratoconus Analysis and Hypothesis Testing (KAHT) | July 2017 - team project for workshop organized by LVP Eye Institute & MIT Media Lab which explored parameters to improve detection of keratoconus (a corneal disorder)
- worked on optical character recognition for data extraction, and comparison of combination of various supervised and unsupervised machine learning techniques to obtain better classification (98.97%)

IOTAS, Irrigation Optimization and thermal control Agriculture system | Jan - Dec 2015
- Designed modular system to be IoT compatible as well as provide local automation
- Worked on Sensor data processing and analysis, cloud storage of data, algorithm development and implementation for precision-farming (including pattern recognition techniques for classification)

'neuron': Mind Controlled Device and Applications | May 2014 - Jan 2015
- Engineered a BCI system including analog circuit designing, signal pre-/processing and EEG headset design
- Worked on data processing, feature generation and classification using MATLAB/Simulink for EEG analysis

LEADERSHIP & ACTIVITIES
Core Mentor | Innovation Garage, NIT Warangal | Aug 2015 - May 2016
- Mentored students (250+) for various event including NITW hackathons, hacknights, etc.

Additional Secretary | ECE Association | Electronic Amateurs & HAM Club, NIT Warangal | Aug 2015 - Mar 2016
- Organized large scale (400+) event & activities; mentored students for research, project ideation & development

Member of Technical Committee | IEEE WIC, Women in Computing, India Council | Aug 2014 - July 2015
- Engaged in online committee activities along with volunteering for technical events and support