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Skills

Programming Languages
Python, MATLAB, C, JavaScript, Verilog, LaTeX

Deep Learning Frameworks & Libraries
PyTorch, ignite, torchvision, torchtext, scikit-learn

Image Processing Libraries
scikit-image, OpenCV, Pillow

Data Mining Libraries
Google BigQuery, SQL, requests, BeautifulSoup, selenium, scrapy

Applications
Xilinx Vivado, Microsoft Azure, Keil µVision, GitHub

Hardware
Raspberry Pi, Arduino, Xilinx Spartan FPGA

Web & App Development
Django, React, React Native for iOS and Android, JavaScript, HTML, SCSS

Operating Systems
Linux, MacOS, Windows

Completed Projects

Computational Histopathology
Segmentation of nuclei in histopathology images of kidney tissues to improve automated diagnosis of cancer using deep convolutional neural networks.

Face detection and recognition
Implementing real time face detection and recognition using OpenCV, scikit-learn and dlib on a Raspberry Pi.

Detecting Ponzi schemes in Ethereum smart-contracts
Using semi-supervised learning on raw bytecode, of smart contracts deployed on the Ethereum blockchain, mined using Google BigQuery.

Fake news classifier
Classifying news articles on a scale from true to fake to help prevent the spread of fake news using natural language processing.

Spell checker
A command line based spell checker written in pure C.

Elections on Blockchain
Using solidity and Microsoft Azure Blockchain workbench for secure, reliable elections deployed on the blockchain.

Space-time Adaptive Processing in radars
Studying Radar Signal Processing and implementing Space-time Adaptive Processing(STAP) in a radar in MATLAB.

Ongoing Projects

Emotion Recognition
Using EEG, ECG, GSR, SKT signals to recognize emotions to help people suffering from PTSD, anxiety and Autism Spectrum Disorder(ASD)

Recursion Cell Image Segmentation
Using deep learning to eliminate experimental noise from biological images.

Ancient Japanese Text Recognition
Using CNNs to localize and classify cursive Kuzushiji text.

Education

National Institute of Technology, Karnataka, India 2017-2021(expected)
B.Tech in Electronics and Communications Engineering

Little Rock Indian School, Karnataka, India 2004-2017
K-12

Course Work

Digital signal processing in Python, Digital system design in Verilog, Embedded system design, Microprocessors, Control Sytems, Numerical Analysis, Data structures and algorithms, Digital & Analog electronics, Digital & Analog communication

Awards and Honors

School topper in Math(99/100) and English(98/100) in Grade 12

Top 1%(CGPA 10.0) in India in Grade 10

Experience

Research Intern May 2019 - July 2019
Under Dr. Shyam Lal - NITK, India
Worked on segmentation of H&E stained histopathology images of kidney tissues to improve automated diagnosis of kidney cancer.
Studied fundamentals of image processing, machine learning, deep learning and computer vision.

Frontend Engineer August 2018 - April 2019
IRIS, NITK (Official student management portal)
Worked on building the frontend for the official student management portal with more than five thousand active daily users including students, faculty, administrators and alumni.
Mentored a freshman intern on frontend testing using JavaScript - Winter 2018.

Python Developer May 2018 - July 2018
Pinnacle Media (Local Media Firm)
Worked on implementing real time face detection and recognition using OpenCV, dlib and scikit-learn on a Raspberry Pi.

Interests

Computer Vision, Neuroscience of Vision, Bionics, Biomedical Imaging, Augmented and Virtual Reality