Russel Shawn Dsouza

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Skills

Programming languages
Python, MATLAB, Rust, C, JavaScript, Verilog

Deep learning
PyTorch, torchvision, torchtext, scikit-learn

Image processing
OpenCV, scikit-image, PIL

Data mining
Google BigQuery, pandas

Web/app development
Django, ReactJS, GatsbyJS

Hardware
Xilinx Artix 7 FPGA, Raspberry Pi, Arduino

Tools
git, Linux, Xilinx Vivado, LaTeX

Notable Projects

Classifying components of handwritten Bengali Dec 2019 - Present
Working on the Kaggle Bengali.AI Grapheme classification challenge using efficient models that train on a single GPU.

Emotion recognition Aug 2019 - Present
Working on designing an embedded system to recognize emotions in real-time using physiological signals with deep learning.

Deep learning for kidney cancer detection May 2019 - Present
Built a supervised learning based model in PyTorch to perform the segmentation of nuclei in H&E stained histopathology images of kidney tissues.

Detecting Ponzi schemes in Ethereum smart-contracts Aug 2019 - Sep 2019
Used a semi-supevised learning based model, built using PyTorch and torchtext, on raw bytecode of Ethereum smart contracts mined using Google BigQuery.

Predicting truth level of news articles Jul 2019 - Aug 2019
Built a classifier using PyTorch and torchtext to classify news articles into true, mostly true, half true, barely true, false and pants-fire.

Spell checker Oct 2018 - Nov 2018
Built a command line application to correct spelling errors in C.

Face detection and recognition May 2018 - Jul 2018
Implemented a real-time face detection and recognition system using OpenCV, scikit-learn and dlib on a Raspberry Pi.

Space-time adaptive processing radar Apr 2019 - May 2019
Presented a report on space-time adaptive processing and simulated STAP in a radar in MATLAB.

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, Machine learning in neuroimaging, 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 Assistant Oct 2019 - Present
Under Dr. Shyam Lal - NITK, India
Working on the design and development of an automated kidney cancer detection system from H&E stained histopathology images.

Research Intern May 2019 - Jul 2019
Under Dr. Shyam Lal - NITK, India
Worked on building deep learning models for the segmentation of H&E stained histopathology images of kidney tissues to improve the automated diagnosis of kidney cancer.

Frontend Engineer Aug 2018 - Apr 2019
IRIS-NITK, India
Worked on building the frontend for the official student management portal 'IRIS' with more than five thousand daily active 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, Manipal, India
Worked on implementing real time face detection and recognition using open-cv, dlib and scikit-learn on a Raspberry Pi.

Interests

Computer Vision, Neuroscience, Cybernetics, and Augmented Reality