




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

scikit-image, OpenCV, PIL

Data mining

Google BigQuery, SQL, pandas

Web/app development

Django, ReactJS, GatsbyJS

Hardware

Xilinx Artix 7 FPGA, Raspberry Pi, Arduino

Tools

git, Linux, Xilinx Vivado, L^AT_EX

Notable Projects

Deep learning for colon cancer detection

Nov 2019 - Present

Working on the design and development of an automated colon cancer detection system from H&E stained histopathology images.

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 - Sep 2019

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-supervised 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 B.Tech in Electronics and Communications Engineering	2017-2021(expected)
Little Rock Indian School, Karnataka, India K-12	2004-2017

Course Work

Digital signal processing in Python, Digital system design in Verilog, Embedded system design, Microprocessors, Control Systems, 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 Under Dr. Shyam Lal - NITK, India Working on the design and development of an automated colon cancer detection system from H&E stained histopathology images.	Oct 2019 - Present
Research Intern 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.	May 2019 - Jul 2019
Frontend Engineer 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.	Aug 2018 - Apr 2019
Python Developer Pinnacle Media, Manipal, India Worked on implementing real time face detection and recognition using open-cv, dlib and scikit-learn on a Raspberry Pi.	May 2018 - July 2018

Interests

Computer Vision, Neuroscience, Cybernetics, and Augmented Reality