

Reuben Varghese

Senior Year B.Tech Student
Computer Science And Engineering
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Research Interests

Computer Vision, Bioinformatics , Medical Image Analysis, Internet of Things

Education

- **VIT University** Chennai,India
Bachelor of Technology in Computer Science and Engineering; 2015 – 2019
- **R.N. Podar School** Mumbai, India
12th Grade(CBSE); 2013 – 2015
- **Thakur Public School** Mumbai, India
10th Grade(ICSE); Among top 5% in the country 2003 – 2013

Research Experience

- **Melanoma classification in skin lesions:** Dec 2018 - Current
 - Working with Prof.Veronika Cheplygina from Eindhoven university of technology(abbr. TU/e) on extending "Crowd disagreement about medical images is informative" to add the following possible improvements.
 - * Developing a framework which makes it easy to substitute different types of attributes, and different types of models.
 - * Adding additional crowd-sourced attributes to the model. For example, describing the asymmetry of the lesion.
- **Transforming Auto-Encoder and Decoder Network for Pediatric Bone Image Segmentation:** Mar 2018 - Oct 2018
 - A state-of-the-art transforming auto encoder-decoder network is trained and the output is compared with that from the currently popular UNet . The aim is to restore the property of equivariance. The model performs better when the input is not properly aligned.
 - Presented at the IEEE International Conference on Intelligent Informatics and BioMedical Sciences in October 2018.
- **Affordable Smart Farming Using IoT and Machine Learning:** Dec 2017 - June 2018
 - Developed affordable smart farming modules which have been deployed to several farms near my university.
 - Achieved an accuracy of 82% in the prediction of the condition of the crop.
 - Presented at the IEEE International Conference on Intelligent Computing and Control Systems in May 2018.

Work Experience

- **University Teaching Assistant** July 2018 - Dec 2018
CSE 1001 - Problem Solving and Programming
 - Assisted Dr.Sweetlin Hemalatha during the course and during the in-lab sessions.
 - Spent four hours per week and assisted freshman students with their doubts both during and after-school hours by regularly holding doubt solving sessions.
- **Summer Internship at RedHat** May 2018 - July 2018
Worked with the CloudForms Management Engine(CFME) team at RedHat Pune, India
 - Worked on smart cloud infrastructure provisioning using machine learning and end to end testing of ManageIQ cloud management platform.
- **Developer and Release Manager at OpenMRS** Feb 2016 - Current
Dev 3 Software Developer and Scrum Leader at OpenMRS

- Member of the OpenMRS developer community and the scrum leader of daily Scrum meetings since Dec,2016. Fixed 15+ bugs and added many new features.
- Currently the release manager for the next OpenMRS Ref App 2.9 Release.

• **Google Summer Of Code**

Worked as software developer at OpenMRS

May 2017 - Sep 2017

- Worked with some of the leading researchers in the field of medicine from research institutes like Regenstrief Institute, Partners In Health.
- Developed the official automatic module repository for OpenMRS. Devised a Spring-Boot application and designed many Rest APIs which populate the UI. The Rest APIs are also being leveraged by the huge number of OpenMRS developers and implement. OpenMRS modules were also migrated to Bintray for automatic module deployment. The production server may be accessed here

• **Technocrats Robotics**

Worked as lead programmer

May 2016 - Dec 2016

- Technocrats is VIT's official robotics team that represents the university at Robocon.
- Led a team of 10 programmers. Assembled and coded various components in the robot including an auto self aligning line following robot using Cytron MD 10-C motor drivers and Cytron LSA-08 Line detecting sensor. Worked on the robot that represented the college at Robocon 2016 which had one automatic bot and one manually controlled bot. Devised and programmed the wheel drive of the robot

• **Freelance developer**

Freelance web and app developer

Nov 2015 - Feb 2016

- **Cyclone Taxi Web and Android app:** Developed for an international client (Australia). Single android app that could be used by both drivers and customers to create, manage, capable of tracking location of taxi and bookings real-time. The web app acts as both the server for the Android app data and also as a web client app

Projects

- **CHAI:** A Retrieval based chatbot using Deep Learning
- **Equilibrium:** Custom CPU governor for Android OS based on Hotplug
- **Optiplant:** An optimal plant growth solution using IOT
- **Ujala :** An Energy efficient complete automation of appliances
- **Comparison shopping engine based on Django framework:** A price comparison website that scrapes the web and uses machine learning to get the best prices for the product being searched.
- **VIT Research Portal :** The website for all VIT research papers. The development server is located here

Programming Skills

- **Languages:** Python, Java, Javascript, C/C++, SQL, XML, Matlab, Octave, x86 assembly language
- **Technologies:** AWS/Google cloud, React, Spring-Boot, Maven, CI, Intel AI Devcloud, Docker, Elasticsearch
- **Libraries and frameworks:** TensorFlow, Scikit, Keras, Theano, Numpy, Django, Volley, Materialize, Bootstrap, React
- **OS and Devices:** Linux(Arch), Windows, Arduino , Raspberry PI 3, Beaglebone Black

Other Achievements

- Speaker for a Student Seminar sponsored by Association for Computing Machinery(ACM) on the topic - "An Insight into modern Robotics" and was awarded by the dean for the same
- Represented my university at Robocon 2016

Last update: November 27, 2018