

SHREYASVI NATRAJ

C: +918277274130, +917899163080 | website: shreyasvinatraj.co, [nshreyasvi.github.io](https://github.com/nshreyasvi) | email: shreyasvi.bt15@rvce.edu.in | github: @nshreyasvi

RESEARCH EXPERIENCE

- **CERN**
Openlab Summer Student | Supervisors: Francois Grey, Sofia Vallecorsa, Lars Bromley | June 2017- August 2018
 - Working on AI and Crowdsourcing in order to analyze UNOSAT satellite images and tag images related to disaster response.
- **CERN (Remote Project)**
Independent Remote Research Project | Supervisor: Archana Sharma | October 2017- March 2018
 - Did simulations using Garfield++ to produce gas tables for Argon-Carbon Dioxide gas mixture and determine ionization and excitation rates.
 - Used ionization and excitation rates to determine gain curve and find transfer probability and penning effect.
(Ref. Dr.Archana.Sharma, archana.sharma@cern.ch)
- **HUMAN COMPUTER INTERACTION INSTITUTE (CARNEGIE MELLON UNIVERSITY) (Remote Project)**
Independent Remote Research Project | Supervisor: Mayank Goel | August 2017 – February 2018
 - Developed and fabricated a CMOS sensor/filter to carry out UV light imaging of teeth to determine oral health
 - Implemented SIFT/SURF, RANSAC, rsl and homography (OpenCV) in order to align the images taken by the camera
(Ref. [Dr. Mayank Goel](mailto:Dr.Mayank.Goel), mayankgoel@cmu.edu)
- **SUSTAINABLE DEVELOPMENT GOALS (SDG) SUMMER SCHOOL (Geneva, Switzerland - Beijing & Shenzhen, China)**
Summer Research Student | University Of Geneva, Tsinghua University | July 2017 – August 2017
 - Implemented multiple machine learning models for object detection with database linkages for accurate trash classification and sorting.
 - Successfully launched and completed a [crowdsourcing campaign](#) and developed a portable low cost scanner for carrying out text detection and OCR for archive documents at UNOG, Geneva using multiple computer vision APIs.
 - Worked on making a serial peripheral interface for Lattice ICE40HX8K-Raspberry Pi communication in VHDL for a low cost cosmic ray detector project called [cosmic pi](#).
(Ref. [Francois Grey](mailto:Francois.Grey), francois.grey@unige.ch), (Ref. [James Devine](mailto:James.Devine), james.dilwyn.devine@cern.ch), (Ref. [Colin Wells](mailto:Colin.Wells), cwells@unog.ch)
- **SRISTI UNICEF SUMMER SCHOOL 2017 (NATIONAL INNOVATION FOUNDATION) (Ahmedabad, India)**
Summer Research Student | National Innovation Foundation, Govt. Of India | May 2017 – June 2017
 - Developed a low cost [toxic gas detector](#) using Arduino Nano and MQ7 gas sensor for prevention of casualties of salt farmers due to toxic gas leakages in Rann Of Kutch region in Gujarat. (Ref. [Prof. Anil K Gupta](mailto:Prof.Anil.K.Gupta), anilg@iima.ac.in)
- **STANFORD SCHOLAR INITIATIVE (Remote Project)**
Stanford Scholar Initiative Student | Stanford University | January 2017 – April 2017
 - Developed research talks on several renowned research papers for the [Stanford Scholars initiative](#) program.
(Ref. [Rajan Vaish](mailto:Rajan.Vaish), rvaish@cs.stanford.edu)
- **GRAVIKY LABS (MIT MEDIA LAB OFFSHOOT) (Bangalore, India - Hong Kong)**
Research Internship | Graviky Labs, Bangalore | May 2016 - August 2016
 - Developed the electrical system for Electro-mechanical exhaust plug-in device to capture PM 2.5 for being processed and converted into ink called [Air-Ink](#)
 - Project documentary shot in Hong Kong & awarded with Shell 'Make the Future' Accelerator and Cannes Golden Lion Innovation Award.
(Ref. [Anirudh Sharma](mailto:Anirudh.Sharma), anirudhs@mit.edu)

WORKSHOPS

- **MIT MEDIA LAB - L.V. PRASAD EYE INSTITUTE (Hyderabad)**
Engineering the Eye 16' Participant | L.V. Prasad Eye Institute, Hyderabad | 14 days (August 2016)
 - Worked on a miniaturized corneal topography attachment for a smartphone to detect presence of corneal disorders at an early stage called [BullsEye](#).
 - Awarded Tej Kohli Corneal Institute (TKCI) Srujana Innovation Award & certificate of team excellence.

EDUCATION

- **BACHELOR OF ENGINEERING**
Bangalore, Karnataka, India, 560059 | 2015-2019
Rashtrreeya Vidyalaya College Of Engineering - CPGA 8.34/10
- **HIGH SCHOOL**
Kullu, Himachal Pradesh, India, 175125 | 2000-2014
Dayanand Anglo Vedic Public School - 9.8 CGPA (10th Grade, Top 1 % in state) & 84% (12th Grade)

PROJECTS

- **Abbie (AR/VR Sensor Based roBot for Intuitive Exploration):** Used Google project tango based area learning and raspberry pi to build an autonomous small scale vehicle. (Provisional Patent Filed, Ref. No. E-2/1224/2017-CHE Application No: 201741015905)
- **STB (Smart Toothbrush):** Developed a Toothbrush whose bristles automatically detaches upon subjection to a particular duration of mechanical forces to help people know right time to replace toothbrush head. (Provisional Patent Filed, Ref. No. E-2/1225/2017-CHE, Application No.:201741015906)
- **Casie (Context Acquired detail Sensing in Indoor/outdoor Environment):** Implemented a pseudo deep-learning model to compare results from multiple machine learning models for emotion analysis using voice and image. (Provisional Patent Filed, Ref. No. E-2/1226/2017-CHE, Application No: 201741015907)
- **Pam (Purification Actuating Module):** Prototyped a floatation device for stagnant water purification using vacuum pump suction, porous membrane filtering as well as self balancing using custom made gyroscope. (Provisional Patent Filed, Ref. No. E-2/1227/2017-CHE, Application No:201741015908)
- **Kapok Fibers:** Synthesized a fibrous biomaterial that can be used for separation of emulsion components with maximum efficiency and for a longer duration.
- **Low cost miniaturized bacteriological culture incubator:** Used microcontroller regulated peltier heating as well as thermocol box in order to create a low cost miniaturized bacteriological culture incubator.

SKILLS

Hardware: VHDL, Xilinx Vivado, Lattice IceCube, Bio-Sensor design
Programming: C++, C, Matlab, Python, VHDL, OpenCV, Tensorflow
Modelling Tools: SketchUp, SolidWorks
OS: Windows, Ubuntu, Debian, Kali Linux
Platforms: Raspberry Pi, Arduino/AVR, Intel Edison, Lattice iCE40-HX8K
Others: Photoshop CC, Premier Pro CC

ACCOMPLISHMENTS

- **Awards:** Awarded as "student with extraordinary achievements" award by the college, SRISTI UNICEF 2015 Award Winner, National Entrepreneurship Challenge 2015/16 Winner, MIT Media Lab-LVPEI Certificate Of Team Excellence
- **Competitions:** Microsoft Imagine Cup Top 10 Pitches, Future Ideas 2015 worldwide competition finalist, KPIT Sparkle 2017 Finalist, KPIT Sparkle Promising Innovator 2015, Shell Ideas 360 2015/16 Stage 2 Qualifiers, Airbus Fly Your Ideas Round 2 Qualifiers 2015, Google Science Fair 2013, 2014, 2015, 2016 Participant, Valeo Innovation Challenge 2016 Participant, Shell Ideas 360 2016/17 Participant
- **College & School:** Former National Entrepreneurship Challenge team member, attended DST INSPIRE SEATS program and INSPIRE Internship Program organized by the central government for top 1% students of the state, Won second prize in physics quiz among to top 1% students during the INSPIRE SEATS Program
- **Communities:** Part of Google Developers Group Bangalore and Singularity University Bangalore Chapter.