Varun Sundar

EE16B068

Indian Institute of Technology Madras

242, Tapti Hostel, IIT Madras

+91 9900391144 varun19299 Varun-Sundar

varun19299@gmail.com

Education

Program	Institution	%/CGPA	Completion
B Tech, Electrical Engineering	Indian Institute of Technology Madras	9.59/10	2020
XII (CBSE)	Delhi Public School Bangalore South	96.2%	2016
X (CBSE)	Delhi Public School Bangalore South	10/10	2014

Scholastic Achievements

- Secured **AIR 2917** in JEE-Advanced 2016 (out of **1,50,000+ candidates**); Secured **AIR 501** in JEE-Mains 2016 (out of **13,00,000+ candidates**)
- Awarded **KVPY Scholarship (top 1% out of 10,000 applicants)** and offered provisional admission to IISc with fellowship in 2016
- **Top 1% (out of 35,000 students)** in the National Chemistry Olympiad 2016 and qualified for the **Indian National Chemistry Olympiad 2016**
- **Top 1% (out of 35,000 students)** in the National Physics Olympiad 2016 and qualified for the **Indian National Physics Olympiad 2016**

Relevant Coursework

- Electrical and Magnetic Circuits;Electrical Machines
- Signals and Systems
- Data structures and algorithms
- Digital Signal Processing
- Probability theory
- Numerical Methods and Applied Programming

Skills

- **Core** - Python, C, C++, Ruby
- **Packages** - Scikit-learn, Scipy, TensorFlow (core and Slim), Keras, Pytorch, Flask
- **Web** - HTML, CSS, JS
- **Others** - LaTex, MATLAB, GNU Octave, Arduino, Git, Shell Scripting

Co-Curricular activities and Projects

Automatic Waste Segregator

Aug'17 - Present—CVI, CFI IIT Madras

- Designed the deep learning backend and fabricated electronics for creating a low-cost, fast response segregator at source. Used an ensemble of visual and electrical features to accurately classify over 4,000 distinct objects into a given set of classes.
- The segregator Compiled a resource optimised version of tensorflow to deploy on low-power **Single Board Computers** such as a Raspberry Pi and Odroid.
- Demonstrated at **CFI Open House**. Patent filled, approval pending.
- Won the campus round of the **9th HULT Prize, shortlisted for the regional round at NTU, Singapore**. Shortlisted for **Design Impact Awards**, **Digital Ocean Campus Programme**, and **Pragyan, IISc.**

Fiducial Localisation

Oct'17-Jan'18—GitLab

- Worked on autonomous and unsupervised detection of fiducials implanted for brain surgery. Utilised **mayavi** and **VTK** to perform 3-D visualisation of skull images, followed by **PCL** methods for KD-Tree objects, 3-D template matching, and local clustering.
- Documented Deep Learning methods to fiducial isolation based on rendered data augmentation, with 3-D covnets ande slices for 2-D covnets.
- Taken up as a part of the **BARC** problem statement, **6th Inter IIT Tech Meet** .

Hand-Gesture Recogniton

Nov'17-Jan'18—GitLab

- Developed an ensembled neural network to accurately classify 20 hand gestures. Used architectures based on *Incpetion-V4* and *Resnet-50* as a part of the structure. Accuracy bench-marked on *Marcel* database. Later extended to incorporate IMU sensor based inputs.
- Adjudged winners for **T-Hub's Hack2innovate**, presented by **NVIDIA** and **Samsung**. Invited to **Global Entrepreneurship Summit, 2017-Hyderabad.**

Positions of Responsibility

Coordinator Centre For Innovation

- Part of **Computer Vision and Intelligence Group**, CFI, a community of students actively working on projects in Computer Vision and Deep Learning.
- Responsible for club's activities including conducting peer-to-peer sessions, hackathons and projects.

Events Coordinator, Shaastra 2018

- Responsible for conducting events under Shaastra, an **ISO 9001:2008** audited technical fest.
- Conducted a workshop on IoT devices and actively managed three other events, including **Amazon AWS Hackathon**, Deep Learning Summit and **IBM Watson Workshop**.

Extra-Curricular Activities

- Managerial Team, **E-Cell**: Conducted Bootcamp as a part of E-Summit 2017, a weeklong mentorship and pitching avenue for aspiring entrepreneurs.
- Represented **Cauvery Hostel** at Schroeter Tennis 2017
- Writer at **Immerse, IIT Madras**, the research blog of the institute.