

Varun Sundar

EE16B068

Indian Institute of Technology Madras

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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.
- 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** a \$ 1 million challenge to solve the world's most pressing issues by using energy to transform the lives of 10 million+ people, dubbed as the "Nobel Prize for Students". Shortlisted for the regional round at **NTU, Singapore**.
- Awarded **Best Research Proposal Presentation** at **Shaastra 2018**. 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 convnets and slices for 2-D convnets.
- 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 *Inception-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.