

## SCHOLASTIC ACHIEVEMENTS

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- Pursuing a **Minor in Computer Science** from with a minor CPI of 10.00 (2017)
- Awarded **AP** grade for excellent performance in **Electronic Devices Lab** (rank 1 out of 139 students) (2017)
- Secured **All India Rank 474** in **IIT JEE-Advanced Examination** among 150,000 candidates (2016)
- Bagged **All India Rank 458** in **JEE Mains** among 1.3 million candidates (2016)
- Bestowed with the prestigious **KVPY Fellowship** by DST, Govt. of India with **All India Rank 106** (2016)
- Receptient of **National Talent Search Examination(NTSE)** Fellowship by NCERT, Govt of India (2014)

## INTERNSHIPS AND KEY PROJECTS

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**Parametric Time Dependent Entropy of EEG** | Summer Internship (Summer 2018)  
*Prof. Anastasios Bezerianos | Cognitive Engineering, SINAPSE* National University of Singapore

- Developed and implemented algorithms in Python to calculate and analyze four distinct **Parametric Time-Dependent Entropies (TDE)** of an EEG (Electroencephalogram) signal
- Designed an algorithm using Time-Dependent Entropy to perform **real-time mental fatigue monitoring**
- Applied **Support Vector Machine(SVM)** to classify **Cognitive Fatigue** and **Mental Workload** achieving **75%** and **82%** classification accuracy respectively
- Developed a **Graphical User Interface** in Qt framework for projection of the aforementioned results

**IITB Mars Rover Project** (October 2017 - Present)  
(The team represented India at the international finals of URC-2018 and bagged 31st position out of 95 teams)

- Implemented **Inverse Kinematics algorithm** for closed-loop control of the 6 DoF robotic arm, with **visual pose estimation** on RViz via URDF model using encoder feedbacks to aid remote operation
- Conceptualised onboard sensor fusing of GPS and IMU via **Kalman Filter** for robust localisation of the rover
- Responsible for integration of a Battery Management System with **Active Cell Balancing**

**Semiconductor Device Parameter Extraction** (November 2017- Present)  
*Prof. M. B. Patil | Electrical Engineering Department* IIT Bombay

- Conducted a literary survey of variation in values of parameters of the **SPICE model** of a bipolar junction-transistor **BC547** affect its device charecteristics and how they can be tweaked to obtain desirable features
- Developed an iterative method based on **Particle Swarm Optimization** to **determine parameters of the transistor** from device charecteristics accurately and in a **short convergence time**

**Autonomous Bipedal Robot with Object Tracking** (Summer 2017)  
*Institute Technical Summer Project* Students Technical Activities Body, IIT Bombay

- Designed a **Bipedal robot** to mimic the **human walk** and capable of recognizing & following objects
- Implemented Control Protocol using **RaspberryPi 3** and designed an algorithm to recognise spherical objects
- Incorporated servo motors to provide the bot with **two degrees of freedom** to mimic the human walk
- Used RaspberryPi camera along with **OpenCV 3.2** library to process video input and track the object

## POSITIONS OF RESPONSIBILITY

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**Hostel Web and Computer Secretary** (August 2017 - May 2018)  
*Hostel 5* IIT Bombay

- Administered and updated the Hostel Website with respect to hostel events, activities, festivals and mess
- Responsible for maintaining and updating hostel computer systems and networks

## EXTRACURRICULARS

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- Volunteered for the **Green Campus initiative** of National Service Scheme(NSS),IIT Bombay (2016)
- Bagged **2nd place** at Vigyasa, an Inter-College general knowledge quiz (2015)
- Cleared Elementary Drawing Examination organised by the Government of Maharashtra (2010)
- Maharashtra **State Champion** in Abacus Mental Arithmetic Exam oraganised by UCMAS (2008)