MALLULA YASODA VENKATA KRISHNA TEJA **193230010**
Systems & Control Engineering **M.Tech.**
Indian Institute of Technology, Bombay **Gender: Male**
DOB: 29-06-1996

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2021	8.78
Graduation	JNTU Hyderabad	CMR Technical Campus	2017	70.80%
Graduation Specialization: Aeronautical Engineering				
Intermediate	Board of Intermediate Education,A.P	Aditya Junior College	2013	95.00%
Matriculation	Board of Secondary Education,A.P	Corbett School	2011	81.83%

SCHOLASTIC ACHIEVEMENTS

- Secured a rank of **172** in **GATE-AE 2018** (Engineering PG entrance exam)

PROFESSIONAL EXPERIENCE

Design Engineer | SS EDUCATIONAL SERVICES [May'17 - Nov'18]

- Accomplished corporate Trainer and Design Engineer with proven track record of around **One and half years** towards the Product Design.
- Expertise in various modules like Surface design, Assembly, Sheet Metal, Drafting, GD&T, etc.
- Accomplished the vehicle re-modification and development of the vintage vehicles using drafts and manufacturing of the new products which are required for the vehicle.
- Actively involved in designing, drafting, creating and implementing training modules and content development going beyond the tool barriers in delivering the training.

TECHNICAL SKILLS

- **Tools:** MATLAB, Simulink, CATIA, GD&T, ANSYS, HYPERMESH, ROS, LaTeX
- **Languages:** Python, C++ and SQL

M.TECH PROJECT

- **Objective: Development of Adaptive Predictive controller using Raspberry Pi** [Jun'20 - till date]

  (Guides: Prof. Sachin C Patwardhan)

  - Developed a low cost embedded **Adaptive controller(AMPC)** using an affordable hardware platform (**Raspberry Pi 4**) and using data-driven linear black box dynamic models.
  - A tool-box is developed in python for **On-line recursive parameter estimation** of linear black-box models and integrated with Python-based **MPC Toolbox**.
  - **Quadratic programming** based MPC formulation is employed to reduce online computation time.
  - The parameter estimation and control algorithms were initially tested using **Temperature Control Lab**(TCL). Subsequently, the AMPC embedded on Raspberry Pi will be implemented on a lab-scale **Boiler setup**.

COURSE PROJECTS AND SEMINAR

- **Implemented LQOC and MPC on CSTR** [Jan'20 - May'20]

  (Course: Advance Process Control)

  - Estimated the states using **KALMAN PREDICTOR** through **Innovation** and **State augmentation approach**.
  - Implemented multi-variable **LQOC** and **MPC** on a given system and along with augmented **KALMAN PREDICTOR**, solved specified **Servo** and **Regulatory problems**.

- **Unicycle Modelling & Control of AR DRONE 2.0 using ROS Interface** [Jan'20 - May'20]

  (Course: Systems and Control Lab)

  - Modelled AR Drone using the first principles.
  - Implemented Closed-loop control of Drone using **feedback** from **Vicon camera** network.
  - Performed **navigation** of the drone using the principle of Vector Field.

➤ **Modelling and Control of a Multi-input Multi-output System** [Jan'20 - May'20]
(Course: Systems and Control Lab)
- ➢ Model identification and design of multi-loop controller for a single board multiple heater system.
- ➢ Generation of ARMAX model using LabView and MATLAB's system identification toolbox.
- ➢ Designed a PI controller for output regulation of a discrete-time control problem with state measurement.

➤ **Prediction of Forest Cover Type** [Jan'20 - May'20]
(Course: Machine Learning for Remote Sensing-I)
- ➢ Implemented **Linear regression, Decision tree** and **KNN** machine learning algorithms on data to predict the Forest cover Type.
- ➢ Applied **Principal Component Analysis** with various classification algorithms.
- ➢ Removed the problem of imbalanced data to provide unbiased classification.

➤ **Prediction and Analysis of Flight Delay Data** [Jan'20 - May'20]
(Course: Machine Learning for Remote Sensing-I)
- ➢ Build a predictive model and achieved 85% accuracy with logistic classifier.
- ➢ Analyzed the data, explored different preprocessing techniques like imputing, label encoding, feature scaling.

➤ **Seminar: Level Control in the Steam Generator of a Nuclear power plant** [Jan'20 - May'20]
(Course: Advance Process Control)
- ➢ Presented a summary of application paper on the application of model predictive control to **Steam Generator**.
- ➢ Studied the unique technique of **Linear Parameter varying MPC** to overcome the difficulties a raise due to the two-phase behavior of water in the tube bundle.

➤ **M.Tech Seminar: State Estimation of Manoeuvring Targets from Noisy Radar Measurements**
(Guide: Prof. Srikanth Sukumar) [Jul'19 - Nov'19]
- ➢ Tracking of a manoeuvring aircraft using noisy measurements obtained from a 3D- Radar.
- ➢ Conducted a literature review and developed a three-dimensional mathematical model based on the **KALMAN FILTERING** technique.

ONLINE COURSES

➤ Machine Learning course by Stanford university (Coursera)
➤ Deep Learning by deeplearning.ai (Coursera)
➤ Tensor flow by deeplearning.ai (Coursera)

B.TECH PROJECT

➤ **Tensile Test on Aluminium Welded Joints Under Oblique Loading** [Jul'16-April'17]
(Guide: Prof.D.Maneiah)
- ➢ Designed the I-section specimens using **CATIA v5** and conducted a simulated testing in **ANSYS**.
- ➢ Performed experimental tensile test on Aluminium-6061 specimens, welded at different angles.
- ➢ For increment in the I-section specimens strength, specimens are undergone through strengthening process like **Heat Treatment (Hardening, Tempering, and Annealing)**.

POSITION OF RESPONSIBILITY

➤ **General Secretary ,SysCon Department, IIT Bombay** [Jun'20 - till date]
- ➢ Organised events like Freshmen orientation, Department convocation etc.
- ➢ Promoting various extra curricular activities to increase the interaction between M.Tech and PhD students.

➤ **Teaching Assistant, SysCon Department, IIT Bombay** [Jul'19 - till date]

RELEVANT COURSES

➤ Advance Process Control
➤ System Modelling, Dynamics and Control
➤ Intelligent Feedback and Control
➤ Control of nonlinear dynamical system
➤ Introduction to Probability and Random Processes
➤ Machine Learning for Remote Sensing-I

EXTRA-CURRICULAR AND HOBBIES

➤ Participated in Volleyball and Carroms in PG General championship [Feb'20]
➤ Hobbies: Playing Cricket, Badminton, and volleyball