

Pavan Kushal Velagaleti

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EDUCATION

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- **Mahindra University** Hyderabad, India
Bachelor of Technology - Mechanical Engineer; GPA: 7.8 *July 2016 - June 2020*
 - **University of michigan** MOOC
PYTHON for everybody-coursera *October-2022*
 - **Udacity** MOOC
Robotic software engineer *january 2023*

SKILLS SUMMARY

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- **Languages:** Python, C++, JavaScript, SQL, bash,C,ROS,urdf,xml
 - **Frameworks:** Scikit,IPynb,Cuda,Catkin, SpaCy, TensorFlow, Keras,
 - **Tools:** GRABCAD-WORKBENCH Ansys-fluent, GIT, VSCODE,GAZEBO, SQLite
 - **Platforms:** Linux, Web, Windows, Arduino, Raspberrypi, HSMworks,Solidworks,Lotus suspension,IPG-carmaker
 - **hardware:** workshop tools:angle grinders,CNC Lathe/Mill, Cura-AM manufacturing
 - **Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management

EXPERIENCE

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- **GAS MONKEYS RACING** *May 2019 - April 2023*
Student (Full-time)
 - **Captain:** Took care of the finances and managed a team of 16+ members managing most of its design reports such as the DFMEA approach of system.
 - **Suspension and Steering head:** Designed and manufactured a suspension system based on H-arm +camber link in the rear and double A-arm in the front.
 - **Vehicle Dynamics head:** Used Ipg carmaker to make efficient vehicle dynamics system for the four wheel drive.
 - **impact:** Built one 2-WD,one 4-WD and one Go-Kart successfully.
 - **Orion CLub of MEC** *September 2019 - April 2022*
Student (full time)
 - **RC PLANES:** designed and assembled RC micro planes using foam board and NEMA-34 Stepper motor, servos and batteries(+ a bunch of electronics).
 - **Lidar drones:** Designed and Manufactured an FPV as well as a lidar UAV Drone capable of lifting a payload of 4 kgs.

PROJECTS

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- **High speed missiles using transverse sonic injections:** (Work in progress) Research oriented, Mechanical engineering , To figure out the maneuverability of generic missile with respect to the injection holes present on it using high end numerical methods. Tech: Ansys meshing and analysis, Nvidia-cuda gpu, MS excel, Solidworks (April '23)
 - **Home service robot(ROS NOETIC, GAZEBO):** built a home service mobile robot that is able to pick and drop objects autonomously navigating itself around the surroundings using localization,mapping and navigation. Tech:c++,catkin-make, RTABMAP ,RGBD -SLAM,SQL,AMCL,Teleop packages,shell scripting
 - **Reinforcement Learning on Open AI - 2D autonomous driving (Reinforcement Learning, Computer Vision):** AI model to solve the Open AI based 2d driving model using multi layer preceptron policy. Tech: Python, Nvidia-Cuda,VSCODE, swig, stable baselines ,ipynb, Tensorflow, Conda environment. (August '18)
 - **Reinforcement Learning on ATARI GAME - Time pilot (Reinforcement Learning, Computer Vision):** AI model to solve the arcade game Time pilot using proximal policy optimization. Tech: Python, Nvidia-Cuda,VSCODE, Raspberry Pi, ipynb, Tensorflow, Conda environment. (August '18)

PUBLICATIONS

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- **Research on missiles:** Work in Progress to be published on High speed missiles using transverse sonic injections.

HONORS AND AWARDS

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- Received a funding of 13 lakh inr for the SAE BAJA competition 2022 for the gas monkeys racing as its captain.
 - Awarded people's choice for mastershot 2019
 - Second Runner's Up for capture the flag organized by the cyber security club-2020
 - Played as a right winger/midfielder for football team of mahindra university-2019-22

VOLUNTEER EXPERIENCE

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- **Host for the art fest Kalakriti-2019** Hyderabad, India
presented the event and performances for kalakriti during the freshman semester *November -2019*
 - **Event Organizer for the Baja Food fest-2021** Hyderabad, India
Organized fund raising event for the gas monkeys racing adn raised 2 lakh inr. *Jan 2018 - Present*