

Tanmay Chhatbar

Aspiring Automotive Engineer

As a dedicated automotive engineering student with a passion for innovation, I'm driven by curiosity and competitive spirit. I understand the value of fluency in technology, and enjoy working in all related avenues.

EDUCATION

Master's in Science, Automotive Engineering Aug 2021 - Aug 2023
Clemson University (CU-ICAR) Greenville, SC
Masters Student of the Year (AuE) 2023

Bachelor of Technology, Mechanical Engineering Aug 2016 - May 2020
Mukesh Patel School of Technology Mgmt. and Engg. Mumbai, India

WORK EXPERIENCE

Vehicle Dynamics & Controls Team Member Jan 2022 - Aug 2023
Deep Orange 14 (CU-ICAR) Greenville, SC

- Developed models to *simulate vertical dynamics* of multi-wheeled vehicles
- Collaborated in developing, testing and *improving control strategies* for a 3-ton tracked, skid-steered, autonomy-capable prototype vehicle
- Instrumented vehicle with *sensors for data collection* and state estimation
- Developed MATLAB scripts for data analysis
- Tools skills* including MIG welding, forklift operation, etc.

Research Assistant Jan 2022 - Aug 2023
Virtual Prototyping - Ground Systems (CU-ICAR) CU-ICAR, Greenville, SC

- Developing *scalable VD models* for skid-steered, tracked vehicles
- Researching GPS systems utility for autonomous vehicles

Automation Controls Designer Jul 2017 - Jul 2021
Starch Products Mumbai, India

Implemented multiple automation solutions to reduce dependency on labor

- Weigh-metric, volumetric *auto-fill systems*
- Variable valve control for fluid flow
- Pulse based rate counter to estimate flow speed, appx. total flow

COMPETITION EXPERIENCE

Technical Head Mar 2019
SAE Aero Design East 2019 Fort Worth, TX

- 7th Place in Mission Performance
- Led the design of fuselage, landing gear and tail-section of aircraft
- Assisted in electronics testing, validation and selection

Team Captain Jan 2020
Boeing Aeromodelling 2019 IIT Kharagpur, India

- 3rd place overall
- Led the team in design and testing of aircraft
- Assisted in development planning and manufacturing

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Skills

- Systems design
- Vehicle dynamics modeling
- Controls development

Computer skills

- MATLAB/Simulink
- Simscape Multibody
- Programming in Python
- Siemens NX
- SOLIDWORKS
- Additive manufacturing
- MCU development

Content creation

- blender (3D animation)
- kdenlive (video editing)
- GIMP (photo editing)

Languages

English (professional)
Hindi (fluent)
Gujarati (native)

Social accounts

[linkedin/in/TanmayChhatbar](https://www.linkedin.com/in/TanmayChhatbar)
[github/TanmayChhatbar](https://github.com/TanmayChhatbar)
[youtube/c/TanmayChhatbar](https://www.youtube.com/c/TanmayChhatbar)

Hobbies

Motorcycles Motorsports
Badminton Sim-racing
AutoX Working on cars



Projects

tanmaychhatbar@gmail.com

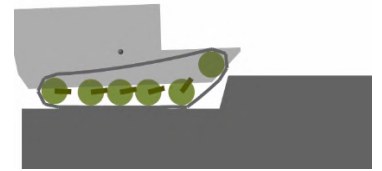
Multi-wheeled Vehicle Modelling

Deep Orange 14

Jan 2022 - Aug 2023

Greenville, SC

- Created various tools of varying complexity to better understand the dynamic limits of the vehicle we develop.



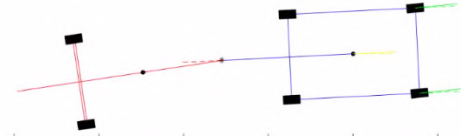
Tractor-trailer Modelling

Clemson University - ICAR

Nov 2021

Greenville, SC

- Developed a fully configurable simplified tractor-trailer model. For small angles of vehicle slip, this model should provide realistic results. The model featured a linear tyre model with no lateral load transfer or suspension.



Vehicle Datalogger

Data collection during AutoX events

Aug 2021 - Jan 2022

Greenville, SC

- As a challenge, I engineered a datalogger for my car to collect inertial and GPS data while participating in AutoX events.



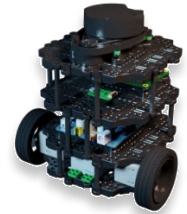
Autonomous Robot

Clemson University - ICAR

May 2022

Greenville, SC

- Using ROS and Python, we programmed a Turtlebot3 robot to take on wall following, obstacle avoidance, line following, stop-sign detection, and following an April-tag.



Small-scale ADAS

Clemson University - ICAR

Nov 2021

Greenville, SC

- An Arduino Uno board was used alongside ultrasonic sensors to implement Lane-Keep Assist and Adaptive Cruise control on a 1/8th RC car.



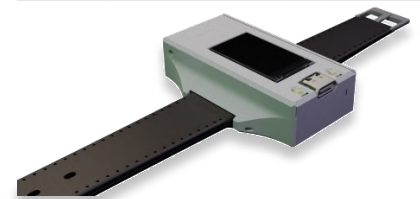
DIY Smartwatch

Designed, manufactured and programmed by self

Mar 2021

Mumbai, India

- Expenditure on education and improvement is okay, buying frivolous objects is not. I wanted a smartwatch. There's only one solution. DIY



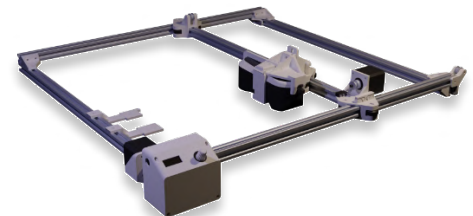
i1Pro 3 Automated Plotter

Designed, manufactured and programmed by self

Feb 2021

Mumbai, India

- To automate the process of calibration of a spectrophotometer, an Arduino Nano board running fully custom-written path calculation software along with an intuitive UI was developed.



Industrial Automation Solutions

Starch Products

Jul 2017 - Jul 2021

Mumbai, India

Designed and manufactured machines for streamlining workflow in potato starch processing, & packaging of soaps & detergents for industrial use.

- Automatic bottle fillers for packaging soaps and detergents
- Sound-based acid flow-rate and quantity estimation for positive displacement pumps.
- Packaging heatshrink auto-cutter.



More details on my projects