

Tanmay Chhatbar

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

(Ongoing) Doctor of Philosophy, Automotive Engineering Aug 2023 - Current
Clemson University (CU-ICAR) Greenville, SC

Graduate Teaching Assistant of the Year (AuE) 2025-26

Master's in Science, Automotive Engineering Aug 2021 - Aug 2023
Clemson University (CU-ICAR) Greenville, SC

Masters Student of the Year (AuE) 2023

WORK EXPERIENCE

Intern, Motion Controls Feb 2025 - Sep 2025
Tesla, Inc. Palo Alto, CA

- Developed and tested novel steering feedback algorithms to study the tradeoffs between feedback quality & implementation cost
- Developed dynamical models for the steering rack, and its control
- Benchmarked different feedback modes using SIL and in-vehicle testing
- Collaborated with data scientists to build fleet-data analysis tools for comparison of TPMS algorithms, optimizing server-side SQL through pre-processing of large tables

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

- Developed *scalable VD models* for skid-steered, tracked vehicles
- Carried out vehicle characterization, digital twinning with DO14 prototype
- Instrumented vehicle with *sensors for data collection* and state estimation
- Benchmarked commercial software against in-house skid-steered models

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

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

- Developed weigh-, volume-*tric* fluid filling solutions with variable valve control
- Pulse based rate counters to estimate flow speed, appx. total flow

COMPETITION EXPERIENCE

Technical Head (7th Place in Mission Performance) Mar 2019
SAE Aero Design East 2019 Fort Worth, TX

- Led the design of fuselage, landing gear and tail-section of aircraft
- Assisted in electronics testing, validation and selection

Team Captain (3rd place overall) Jan 2020
Boeing Aeromodelling 2019 IIT Kharagpur, India

- Led the team in design and testing of aircraft
- Assisted in development planning and manufacturing

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Skills

- Modeling
 - Model fitting
 - Vehicle dynamics
- Controls & Estimation
 - Robust Control
 - MPC
 - Nonlinear Control
- Systems design

Computer skills

- Computers
 - MATLAB/Simulink
 - C, C++, Python
 - Simscape Multibody
 - Algoryx
- CAD
 - Siemens NX
 - SOLIDWORKS
- Additive manufacturing
- Electronics
 - Firmware development
 - PCB Design

Content creation

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

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)



tanmaychhatbar.com

Projects

tanmaychhatbar@gmail.com

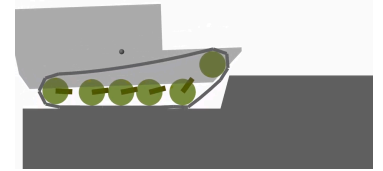
Multi-wheeled Vehicle Modelling

Jan 2022 - Aug 2023

Deep Orange 13-14

Greenville, SC

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



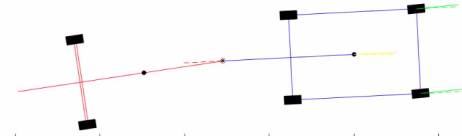
Tractor-trailer Modelling

Nov 2021

Clemson University - ICAR

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

Aug 2021 - Jan 2022

Data collection during AutoX events

Greenville, SC

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



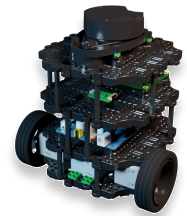
Autonomous Robot

May 2022

Clemson University - ICAR

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

Nov 2021

Clemson University - ICAR

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.



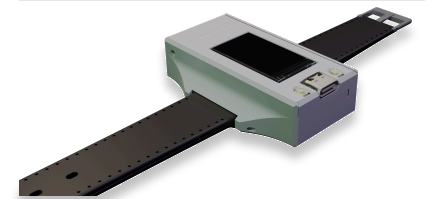
DIY Smartwatch

Mar 2021

Designed, manufactured and programmed by self

Mumbai, India

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



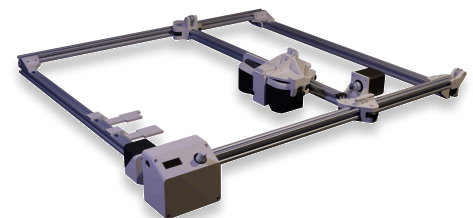
i1Pro 3 Automated Plotter

Feb 2021

Designed, manufactured and programmed by self

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

Jul 2017 - Jul 2021

Starch Products

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