

# 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

<b>(Ongoing) Doctor of Philosophy, Automotive Engineering</b>	Aug 2023 - Current
Clemson University (CU-ICAR)	Greenville, SC
<b>Master's in Science, Automotive Engineering</b>	Aug 2021 - Aug 2023
Clemson University (CU-ICAR)	Greenville, SC

Masters Student of the Year (AuE) 2023

## WORK EXPERIENCE

<b>Intern, Motion Controls</b>	Feb 2025 - Sep 2025
Tesla, Inc.	Palo Alto, CA
<ul style="list-style-type: none"><li>Developed and tested novel steering feedback algorithms to study the tradeoffs between feedback quality &amp; implementation cost</li><li>Developed dynamical models for the steering rack, and its control.</li><li>Benchmarked different feedback modes using SIL and in-vehicle testing</li><li>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</li></ul>	
<b>Research Assistant</b>	Jan 2022 - Current
Virtual Prototyping - Ground Systems (CU-ICAR)	Greenville, SC
<ul style="list-style-type: none"><li>Developed <i>scalable VD models</i> for skid-steered, tracked vehicles</li><li>Carried out vehicle characterization, digital twinning with DO14 prototype</li><li>Instrumented vehicle with <i>sensors for data collection</i> and state estimation</li><li>Benchmarked commercial software against in-house skid-steered models</li></ul>	
<b>Vehicle Dynamics &amp; Controls Team Member</b>	Jan 2022 - Aug 2023
Deep Orange 14 (CU-ICAR)	Greenville, SC
<ul style="list-style-type: none"><li>Developed models to <i>simulate vertical dynamics</i> of multi-wheeled vehicles</li><li>Collaborated in developing, testing and <i>improving control strategies</i> for a 3-ton tracked, skid-steered, autonomy-capable prototype vehicle</li></ul>	
<b>Automation Controls Designer</b>	Jul 2017 - Jul 2021
Starch Products	Mumbai, India
<ul style="list-style-type: none"><li>Developed weigh-metric, volumetric fluid filling solutions with <i>variable valve control</i></li><li>Pulse based rate counters to estimate flow speed, appx. total flow</li></ul>	

## COMPETITION EXPERIENCE

<b>Technical Head</b> (7 <sup>th</sup> Place in Mission Performance)	Mar 2019
SAE Aero Design East 2019	Fort Worth, TX
<ul style="list-style-type: none"><li>Led the design of fuselage, landing gear and tail-section of aircraft</li><li>Assisted in electronics testing, validation and selection</li></ul>	
<b>Team Captain</b> (3 <sup>rd</sup> place overall)	Jan 2020
Boeing Aeromodelling 2019	IIT Kharagpur, India
<ul style="list-style-type: none"><li>Led the team in design and testing of aircraft</li><li>Assisted in development planning and manufacturing</li></ul>	

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## Skills

- Modeling & Controls
  - Model fitting
  - Vehicle dynamics
  - Controls development
  - Systems design

## Computer skills

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

## Content creation

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

## Social accounts

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

## Hobbies

Motorcycles	Motorsports
Badminton	Sim-racing
AutoX	Working on cars



[tanmaychhatbar.com](http://tanmaychhatbar.com)

# Projects

tanmaychhatbar@gmail.com

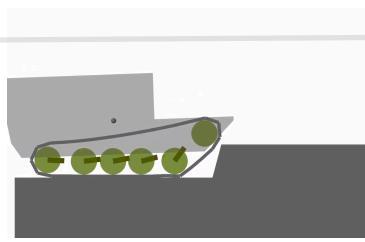
## Multi-wheeled Vehicle Modelling

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.



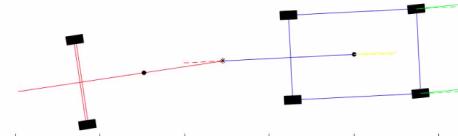
## Tractor-trailer Modelling

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](#)



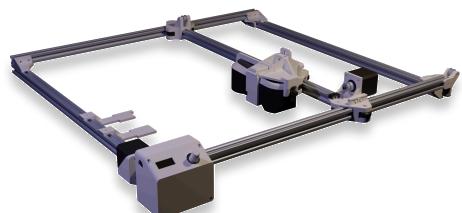
## i1Pro 3 Automated Plotter

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