

Sudarson Nanthacoumarane



Profile

Mechanical Engineer with 4+ years of R&D experience in robotics and automotive applications. Proven track record in CAD/CAE design, FEA, and product lifecycle management. Seeking innovation-driven opportunities to develop high-performance mechanical systems.

Contact Details

@ sudarson.nantha@outlook.com

+33 07 54 19 78 07

linkedin.com/in/snantha

Reims, France

Skills

Welded Structures

Prototyping

Sheet Metal

Machining

FEA

ISO GPS

Additive Manufacturing

Software

Solidworks

ANSYS

CATIA V5

Solidworks PDM

Inventor

Python

MATLAB

Bash Script

Languages

- English - Fluent C2
- French - Intermediate B2
- Tamil - Native

Hobbies

- Guitarist (10 years)
- Cyclist
- Motorsport enthusiast

Experience

Vitibot, France

Mechanical Engineer

Oct 2022 - Present

Mechanical Engineering Intern

Feb 2022 - Jul 2022

- Designed the entire chassis for the next generation of BAKUS vineyard robots to be 23% stiffer and 5% lighter than the current model
- Averted complete recall of the robot fleet by developing retrofitable reinforcements to combat fatigue-induced chassis failure
- Redesigned battery casings in thermoplastic to double the lifespan of batteries
- Designed, prototyped, and tested electric intervine mowers to trim weeds around vine trunks, and converted hydraulic intervine mowers to fully electric systems
- Created a tool to calculate the inverted mechanics and truss forces of the BAKUS tool holder as a 4-bar linkage with movement controlled by a linear actuator
- Conducted detailed FEA analyses on the robot chassis and various vineyard tools
- Used IronPython/ANSYS ACT scripting to extract and visualise FEA results
- Spearheaded the adoption of ISO GD&T and welding standards companywide

Centre National de la Recherche Scientifique (CNRS), France

Mechanical Research Engineer

Aug 2021 - Sept 2021

- Designed the initial concepts for Cable Driven Parallel Robots (CDPR) used in the XXL Robotics Platform of the TIRREX project (worth €41.6 million)
- Created detailed robot animations using Solidworks Motion
- Conducted month-long experiments to study creep in polymer CDPR cables
- Characterized theoretical formulae for cable creep based on experimental results

Makara Cycles, Chennai, India

Mechanical Engineer

Aug 2018 - Dec 2019

- Designed, prototyped, and tested modular bicycle frames
- Headed the development of in-house high performance aluminium hubs, a 6-speed bicycle gearbox, and bicycle frame sizes based on anatomical data
- In charge of all 3D printing and rapid prototyping activities
- Carried out long term testing and validation of bicycle components using DFMEA
- Created patent drawings and managed company suppliers
- Established company standards for project management

Education

Centrale Nantes, France

MSc. Mechanical Engineering

Sept 2020 - Jul 2022

- Specialization in Advanced Manufacturing

Visvesaraya Technological University, India

B.E. Mechanical Engineering

Sept 2014 - Jun 2018

EduCadd Learning Solutions Ltd., India

Master Diploma in Mechanical CAD

July 2015 - Nov 2017

- Certification in AutoCAD, CATIA V5, Solidworks, Altair Hypermesh

Motorsports Projects

- Formula Student 2021** - Chassis and Suspension Designer
- Ecokart 2017** - Team Captain/Lead Designer
- ESVC 2017** - Vice Captain/Lead Designer
- Int'l Series of Karting 2017** - Team Captain/Lead Designer

Publications

Sudarson Nanthacoumarane, Bozhao Wang, Afia Kouadri-Henni, Philippe Cardou, Stéphane Caro. **Polymer Cable Characterization in Cable-Driven Parallel Robots**. 25ème Congrès Français de Mécanique Nantes, Aug 2022, Nantes, France ([hal-03758221](https://hal.archives-ouvertes.fr/hal-03758221)).