Madhav Rawal

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EDUCATION

Bachelor of Technology in Mechanical Engineering **July 2017- June 2021**
Symbiosis International University CGPA 9.38/10
XII CBSE **March 2017**
Vikhe Patil Memorial School Percentage 91.5/100

EXPERIENCE

American Axle Manufacturing India Pvt. Ltd. **Pune, India**
Project Intern Feb 21 -Present

- Designed and Developed the proof of concept for a Real Time Axle Wear Monitoring System.
- Built and deployed the system with a cost reduction of over 90% and an error of <1% using open-source tools.
  Skills learnt/ used: IoT, DBMS, Micro-controller programming

PROJECTS

Vargikaran Bot **Oct 20 – Feb 21**

- Headed a team of 4 colleagues and engineered a generic and efficient solution for Warehouse automation under the e-Yantra Robotics Challenge.
- Finished in the top 20 teams out of 500+ teams all over India
- Concepts used – ROS, Robotic Manipulation, Robot Perception, MQTT, MoveIt!

Solving Intelligent Machining Problems with A Novel Evolutionary Algorithm **Dec 19 – Dec 20**

- Invented 2 novel constraint handling techniques and rebuilt the highly researched Cohort Intelligence algorithm using vectorization.
- Implemented the novel algorithm to optimize modern machining problems and improved the results by 98%.
- Skills used - MATLAB, GA, Optimisation

Mathematical modelling of flow of nano fluids **March 19 – Dec 19**

- Discovered the mathematical fluid flow of Sutterby Nanofluid and Hyperbolic Tangent Nanofluid under different external conditions.
- Possible applications of research are in lubrication, Photothermal Cancer therapy
- Skills used – MATLAB, Simulink, Fluid Mechanics

Smart menu card system concept **Jan 20**

- Pitched a start-up idea of a smart menu card as the leader of a team of 4 colleagues in StartUP-Con - Organized by Symbiosis Institute of Technology in partnership with IIT Bombay.
- Awarded a Special mention from the Jury for the concept, presentation & business model.
- Skills used - Project Management, Ideation, Presentation, Entrepreneurship, Business Model Canvas.

PUBLICATIONS

- Numerical simulation of thermal energy transport on radiative MHD Sutterby nanofluid flow through porous structures with electroosmosis.
- Electroosmosis and transverse magnetic effects on radiative tangent hyperbolic nanofluid flow through porous medium.
- Solving intelligent machining problems with Modified Cohort Intelligence (Under Review)

SKILLS

Software: C++, Python, ROS, OpenCV, TensorFlow, MATLAB, Simulink, ANSYS, PRO E, Solid works
Certifications in Concepts: Robotics, Machine Learning, Deep Learning, Evolutionary Optimisation
Personal skills: Leadership, Teamwork, Project management, Innovation, Design Thinking

ACHIEVEMENTS

- Consecutively won the Symbiosis Merit Scholarship for 5 semesters for standing first in class
- Special Mention in StartUp-Con for the best pitch
- Runner up in Formula Student Best Design Category in FSAE Maruti Suzuki Supra 2018