Sourav Pattnaik

Senior Manager - Driving Dynamics Product Attribute
Pune, India

+91 9439428222
Email - souravpattnaik98@outlook.com
Social - linkedin.com/in/spattnaik98
Portfolio - souravpattnaik.com

Vehicle Dynamics Engineer with expertise in ride and handling development and the end-to-end delivery of chassis systems — spanning requirement engineering, virtual development and CAE model correlation, prototype testing, and objective and subjective evaluation. Skilled in model-based development using MATLAB/Simulink and IPG CarMaker, with hands-on multibody simulation experience. Proven record of delivering superior ride comfort, steering feel, and handling on production ICE and EV programs at an OEM. MSc in Automotive Systems from HAN University of Applied Sciences (Netherlands), recipient of HAN Excellence Award.

EDUCATION

HAN University of Applied Sciences, Arnhem, Netherlands 2021 – 2023
Master Engineering Systems, Automotive Systems
Masters (HBO), Average grade of 7.5
Modules: Advanced Vehicle Dynamics, Systems Modelling, Applied Control, Big Data/Small Data

SRM Institute of Science and Technology, Chennai, India 2016 – 2020
Mechanical Engineering
Bachelor of Technology, Aggregate score of 84%

WORK & CO-CURRICULAR EXPERIENCE

Senior Manager — Driving Dynamics Product Attribute Oct 2025 – Present
Post Graduate Engineering Trainee — Driving Dynamics Product Attribute Oct 2024 – Oct 2025
Tata Motors Passenger Vehicles Ltd., Pune, India

- Drove ride, handling, steering, and chassis attribute development across 12 vehicle programs spanning ICE and EV platforms, from early concept to engineering sign-off
- Performed subjective (sensory) and objective evaluation of ride comfort and steering assist, correlating results with standardised test procedures including ride tests, SSCT, transient handling tests, and K&C measurements
- Developed chassis systems end-to-end — from vehicle-level requirement engineering and target setting, through prototype testing, iterative tuning, and validation, to post-production support and VAVE-driven improvements
- Tuned and evaluated damper technologies (including conventional, FDD, DCx, MTV, MTVCL, and semi-active systems), tyres and EPAS systems through subjective and objective assessments on proving grounds, public roads, and test rigs
- Defined vehicle-level ride and handling targets and worked closely with the CAE team to correlate multibody simulation models against measured vehicle data, closing the loop between virtual predictions and on-road behaviour
- Developed improved ride evaluation methodology and multiple new objective metrics to enhance correlation between subjective driver feedback and measurable vehicle behaviour
- Conducted actual vehicle experiments, data measurement and analysis using measurement equipment and DAQ systems
- Contributed to early program architectural decisions, technology selection strategies, and target-setting processes influencing future vehicle platforms
- Collaborated with 6+ supplier partners and cross-functional teams including CAE, design, production, and testing agencies to drive part readiness and issue resolution
- Prepared and closed engineering deliverables on program gateway portals across multiple program milestones
- Coordinated activity planning across multiple programs, mentored junior engineers and interns, and supported team capability development

Vehicle Motion Thesis Worker March 2023 – October 2023
Polestar, Gothenburg, Sweden

Contracted project & graduation thesis with the vehicle motion team, targeted at developing a control algorithm for torque vectoring for a dual motor front axle drive. Designed a novel control strategy to study torque vectoring on different drive configurations. Validated results via virtual model-based testing on CarMaker and identified scenarios for efficient use of torque distribution on electric drive.

Technical Director March 2019 – March 2020
Powertrain Engineer September 2017 – March 2019
Camber Racing, Formula student team of SRM IST, Chennai, India

Designed and optimized cooling systems for the Formula Student engine along with system integration of complete powertrain and drivetrain packages. Collaborated on engine intake, exhaust, mapping and drivetrain design, and contributed to manufacturing, assembly and maintenance of the vehicle. As Technical Director, directed design decisions across IC powertrain, vehicle dynamics and electrical subsystems, managed financial planning, project management and personnel across all technical aspects of the team, and led design presentations at all competitions and exhibitions.

PROJECTS & TRAININGS

- Control for torque vectoring of electric drive — Polestar, Sweden
- Non-linear handling behaviour mathematical model for modular research vehicle using MF-Tyre — HAN University
- Modelling and simulation of the thermal process of a lithium-ion battery — HAN University
- Design of control algorithm for level control system — HAN University
- Classification and prediction algorithm of e-bike usage for micro-mobility company Bondi — HAN University
- Design of cooling system for Formula Student engine — Camber Racing
- **Industrial Training & Project:** “Troubleshooting low engine RPM post assembly” —Volvo Eicher Commercial Vehicles, Pithampur, India (June 2019)
- **Industrial Training & Project:** “Design analysis and FMEA study of fuel components” — Sandhar Automotive, Gurgaon, India (June 2017)
- Synthesis & analysis of refuse derived fuel from municipal solid waste — SRM IST

Detailed case studies for all projects available at souravpattnaik.com

ACHIEVEMENTS

- Recipient of **HAN Excellence Award and Holland Scholarshi**p from HAN University, January 2021
- Attained **Runner's up position in Engineering Design Event** at Formula Bharat 2020 as Technical Director
- Attained **3rd position in Engineering Design Event** at Formula Bharat 2019 as Powertrain Engineer

KEY SKILLS

Vehicle Dynamics & Chassis:
Ride Comfort & Handling Development, Damper Tuning (FDD, DCx, MTV, MTVCL, Semi-Active), Vehicle Level Tyre Development, EPAS Calibration & Drive Mode Tuning, Suspension & Chassis Attribute Development, Subjective Evaluation

Testing & Measurement:
Proving Ground & Public Road Testing, Standardised Test Procedures (Ride, SSCT, Transient Handling, K&C), Measurement Equipment & DAQ Systems, DOE (Static & Dynamic), Objective-Subjective Correlation

Engineering Methods:
Multibody Simulations, Model Based Development, Control Systems Design, Root Cause Analysis, Systems Modelling, Applied Machine Learning, Data Analytics

Software:
MATLAB, Simulink, Amesim, IPG CarMaker, CarSim, MSC Adams, Python, C++, CATIA V5, SolidWorks, PRO E, ANSYS