Bikash Mehta

Email: bmehta@siue.edu | Phone:447-902-5572 | www.linkedin.com/in/bikashmehta9861
Fremont, California

EDUCATION

Southern Illinois University, Edwardsville, Illinois **01/2024-08/2025**
MS in Mechanical Engineering (GPA: 4.0)
Major courses: Advanced Dynamics, Finite Elements, CAM, Automatic Control, Modern Control, Advanced Fluid Mechanics, Continuum Mechanics, Numerical Analysis

Kathmandu University, Dhulikhel, Nepal **08/2016-12/2020**
BE in Mechanical Engineering (GPA: 3.53)
Activities: SAE BAJA Go-Kart Championship, Design and Editor head, AMES

PROFESSIONAL EXPERIENCE

Test Engineer - Tesla Inc. | Project Owner **8/2025 – Present**

- **Executed striker fatigue validation** on closure latch assemblies, completing **50,000+ open–close cycles** to verify latch durability, alignment integrity, and compliance with OEM performance standards.
- **Led robot-assisted hood cycling tests**, achieving **100,000+ automated open/close cycles** across thermal and load profiles, ensuring long-term hinge robustness and actuation reliability.
- **Performed vibration testing on the Cybercab roof system** for **20+ hours across multi-axis vibration profiles (up to 30 g RMS)** before **HTHE and PTCE aging**, confirming roof structure integrity, seal retention, and NVH stability.

Mechanical Test Rig Design - 5th Axis Inc. | Project Owner **6/2025 – 8/2025**

- Designed and developed a **torque test rig** capable of testing components up to **150 Nm** torque using a **high-voltage rotary actuator** coupled with a precision **leadscrew mechanism** for controlled torque induction.
- Selected and implemented the **low-voltage electronics** architecture involving **Teensy microcontroller**, **instrumentation amplifier**, and **24-bit ADC** for accurate torque signal conditioning and acquisition.
- Achieved robust system control by synchronizing **PWM-driven motor control** with feedback from torque and position sensors, ensuring repeatability and stability during extended test cycles.

Data Analysis and RLDA - Yatri Motorcycles | Project owner and Team lead **09/2022 – 12/2023**

- Wrote python code to analyze data from more than **100 million data points** received from sensors during RLDA using **NumPy, SciPy and matplotlib.**
- Achieved **85% correlation** of strain, acceleration, and suspension travel with the **CAE model.**
- Completed fatigue damage analysis on **nCode** using **rainflow, histogram, and level counting algorithms,** and created road loading profile **(block-cycle loading)** for accurate test environment creation.
- Selected high speed multiplexed sigma delta Analog to Digital Converter (**ADC**) and oversaw selection of high-precision Programmable Gain Amplifier (**PGA**) for digitization of strain gauge signals.

Design and Development of Test Rigs - Yatri Motorcycles | Project owner and Team lead **05/2021 - 08/2022**

- Selection and sizing of pneumatic screw compressor, pneumatic cylinder, pneumatic components, **load cell,** linear and rosette **strain gauges,** for fatigue testing setup.
- Carried out component level tests for **5 million cycles** of loading for various **load profiles** on front frame, swingarm, and other components and **verified FEA** simulation.
- Oversaw the design of battery shock test rig to carry out testing of **50kg** traction battery at half-sine shock of **50g** peak acceleration and **6ms** pulse duration as per **AIS-048**, **AIS-156**, and **UN 38.3.4.3** testing standards.

Jigs and Fixture - Yatri Motorcycles | Project owner **12/2020 - 04/2021**

- Designed and manufactured five sub-components and one **marriage rotatable** welding fixture with **±1 mm tolerance.**
- Generated the **G-code** for CNC manufacturing, ensuring precision and efficiency in producing various components for multiple jigs using **Fusion 360**.

ACADEMIC AND INTERNSHIP PROJECTS

Design and Analysis of Handlebar of Motorbike - Yatri Motorcycles **07/2020 - 11/2020**

Design and Fabrication of Line Following Dish Serving Robot – Kathmandu University **07/2017 - 06/2018**

TECHNICAL SKILLS

Mechanical: CAD, GD&T, DFMEA, FEA, DFM, Experimental Validation, MBD, 3-D Printing, CNC mill and Lathe
Software: SOLIDWORKS, AUTOCAD, Inventor, ANSYS, MATLAB, SIMULINK, PYTHON, nCode, Fusion 360, PTC CREO, REVIT, CATIA, Blender, Adobe Illustrator, Adobe InDesign, LABVIEW