

Subrat Kumar Behera

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HiddenCloak, live on the Apple App Store | hiddencloak.com

Robotics, mechatronics, mechanical and software engineer at Tesla; builder of the HiddenCloak iOS app.

EXPERIENCE

HiddenCloak (independent), San Jose, California, USA

Nov 2025-Present

Founder & Sole Developer

- Shipped an **AI iOS app** (live on the App Store) that turns a problem into a step-by-step action plan.
- Built the full stack solo: **React Native/Expo** app, **Express/Prisma/PostgreSQL** API, website and CI.
- Dual-model **OpenAI + Anthropic** planning with cross-judging, capped AI spend, fail-closed moderation.

Tesla Inc., Fremont, California, USA

June 2023-Present

Senior Test Engineer

- Designed and integrated an autonomous robotic system with closed-loop **control** using SWAN firmware, GPS, IMU, Kalman Filter, Stanley Algorithm, PID, and **CAN/Etherloop**-based communication reducing system cost from \$450K to \$2.5K.
- Developed an in-house crash-test speed measurement tool (lasers, **Raspberry Pi, Python**), saving 90% cost.
- Scripted **Python** code to interpret and **visualize data** for IIHS test protocol, increasing reliability, ensuring repeatability, and reducing manual interpretation and effort by 50%.
- Scripted **sensor data analysis** tools (post test data comparison, pre-test sensor checks) to in-house all-in-one UI based software tool in a collaborative effort using **Python** and **Git**, reducing troubleshooting time by ~80%.
- Redesigned flying-floor guide rollers (**3DX, GD&T**) for on-track assembly, cutting maintenance ~80%.
- Built a joystick-controlled laser track (**Arduino, stepper motors**, gantry), improving test alignment by 20%.
- Built tools combining past test data, video and a GUI (**Python, VBA**), cutting troubleshooting ~20%.
- Owned sensing system performance from prototyping through deployment: defined integration test plans, executed vehicle-level bring-up and characterization across environments, debugged hardware-software interactions.
- Coordinated with program, sensing, design and firmware teams to validate system- and vehicle-level performance.

Tesla Inc., Fremont, California, USA

May 2022-Jan 2023

Passive Safety Testing Engineering Intern

- Implemented an ML algorithm with a Python GUI to detect sensor anomalies after crash tests, saving ~75% of man-hours and stopping erroneous sensors from being missed.
- Cut a weekly crash-channel check from 2.5 hrs to 10 min with **VBA** auto-import (test request vs. DAQ).
- Cut point-feature export time by ~80% with Polyworks **macros** and custom functions for **data extraction**.
- Created a **VBA** Excel tool to measure post test deformation from polyline measurements.
- Scripted GUI for automating data extraction from Outlook and updating JIRA tickets with **Python**.
- Updated regulation procedures, checklists for accurate and smoother test conduction.

Maruti Suzuki India Limited (R&D Division), Rohtak, Haryana, India

July 2017-June 2021

Sr. Crash Testing Engineer (Deputy Manager)

- Conducted research project on reducing chest injury by 34% by modifying seat structure to restrain the Hybrid III 50th percentile dummy (ATD)'s pelvis movement, validated through sled simulations.
- Applied **design** to reduce steering displacement by 50% below 80 mm limit, dash panel deformation and A-A pipe bending of a challenging forward-facing wagon with negligible cost increase.
- Improved 2 base-variant vehicles' star rating from 0 to 2 as well as evaluated star ratings as per NCAP of upcoming Maruti models with active support in development for crash compliance for AIS and ECE regulations.
- Completed product development for new and existing vehicles within 4 months of design prototype release.
- Integrated restraint systems through **model data analysis** and **coordination with designers and suppliers**.
- Reduced worker fatigue and material transfer time from storage area to production line by 40% through a trolley transfer method design and won best design award.

EDUCATION

Texas A&M University, College Station, TX

May 2023

Master of Science, Mechanical Engineering, 3.9/4.0

SKILLS

Programming & Software: Python (advanced), R, C, C++, MATLAB, VBA, $\text{\LaTeX}$, Git, GitHub, Polyworks

Robotics/Embedded: Arduino, Raspberry Pi, ESP32, CAN, Etherloop, TCP, PCAN, Ethersnooper, CANape, ROS 2

CAD/Analysis software: SolidWorks, 3DX/CATIA, ANSYS, DIAdem, Dymola, LS-DYNA, LS-PrePost

Hardware: High-speed cameras, CMM, sled machine, metal fabrication machines

Others: data analysis, deep learning (CNN, RNN, NN via PyTorch), JIRA