

# Darshit Solanki, B.Eng.

Interdisciplinary – Industrial & Automotive Engineer



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## Professional Summary

Expert in injection mold design, Class-A/B surfacing, and reverse engineering with a focus on production-ready handoffs (STEP, GD&T, ERP-BOMs). Proven track record in pump and consumer electronics sectors. Currently bridging shop-floor expertise with advanced FEM simulation, SAP S/4HANA & Quality and reliability at Trier University.

## Professional Experience

**Jr. Design Engineer** | Meru Pumps, India.

January 2023 – August 2023

- Reverse-engineered the assembly of 12+ pump components to  $\pm 0.1$  mm tolerances accuracy; delivered parametric STEP files for direct tooling.
- Managed ISO/ASME GD&T documentation and ERP-ready BOMs for complete assembly structures.
- Validated DFM principles (draft/wall thickness) for casting and injection molding to achieve zero-defect output.
- Coordinated cross-functionally to ensure CAD hygiene and bridge the gap between design and manufacturing.

**Product Design Engineer** | Design CAD Centre & Service Provider (DCCSP), India.

July 2021 – May 2022

- Designed and validated high-precision components using SolidWorks, CATIA V5, and AutoCAD with a focus on GD&T and production feasibility.
- Led prototype field testing to resolve dimensional and kinematic issues prior to production release.
- Managed end-to-end client projects from initial design brief to prototype sign-off and technical documentation.

## Portfolio & Engineering Projects

Live interactive portfolio with 3D CAD viewer, downloadable STEP files and industrial case studies: [www.sketchsolid.de](http://www.sketchsolid.de)

- **TWS Earbuds RE:** Full reconstruction to  $\pm 0.2$  mm snap-fit tolerance with G2/G3 surface continuity. Optimized for PC/ABS injection molding with  $1.5^\circ$  draft and skeleton modelling.
- **Water Bottle Assembly:** 10-component digital twin featuring trapezoidal threads, ISO-standard fits, and ERP-ready BOMs. Applied shrinkage and parting line DFM for casting and molding.
- **Injection Mold Design:** Developed core/cavity sets with non-planar parting lines, side-action sliders for undercuts, and 0.5–0.7% shrinkage compensation.
- **Advanced Class-A Surfacing:** Achieved G3 curvature-rate continuity (automotive standard) using 2-boundary lofting, validated via zebra and curvature comb analysis.
- **Workflow Framework:** Documented a 5-phase design-to-manufacturing hierarchy for a complex assembly, embedding material specs and verification stages.

## Skills

- **CAD — Tools:** SolidWorks, CATIA V5/V6, ANSYS, Creo, AutoCAD, NX
- **Surface Modelling:** Class-A/B surfacing, G0–G3 curvature continuity, zebra & curvature analysis
- **Manufacturing:** DFM, injection mold die design, metal casting mold design & core/cavity feasibility.
- **Engineering Standards:** GD&T (ASME Y14.5 / ISO 1101), BOM management & ERP management.
- **Design Methods:** Parametric & skeleton modelling, large assembly management, weldment & structural frame design.
- **Project Management:** Cross-functional coordination, vendor management, technical documentations.

## Education

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**MSc in Interdisciplinary Engineering** Trier University of Applied Sciences, Germany *October 2023 – Present*

- Finite Element Method — Structural crash simulation for automotive body components (ANSYS), frontal impact load case analysis.
- Quality & Reliability Engineering — Non-destructive testing (NDT) for structural integrity; internal crack and material impurity detection.
- Electronic Engine Management — Sensor integration, IC engine digitalization, control system fundamentals.
- ERP System Programming — SAP S/4HANA: production planning, BOM management, logistics module configuration.

**Bachelor of Engineering — Automobile Engineering** L.D. College of Engineering, India *July 2017 – June 2021*

| CGPA: 7.98 / 10

- Vehicle safety systems, structural design, and automotive-grade precision manufacturing.
- Machine design & Manufacturing Process Optimisation
- Automotive Component Design & Automotive Component Testing Systems

## Certifications

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- **SolidWorks Certification** — Khodiyar CAD Centre India Pvt. Ltd. (March 2019)

## Language Proficiency

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**English** — B2 Upper Intermediate (Professional working proficiency)

**German** — B1 Intermediate (Currently advancing through active immersion)