

Ali Ellithy

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SUMMARY

Dedicated Automotive Engineer with hands-on experience in developing innovative suspension and chassis solutions. Proficient in CAD design (SolidWorks, CATIA) and engineering analysis, with a strong understanding of automotive systems, including vehicle dynamics, geometric dimensioning, and Vehicle Handling. Highly skilled in prototype assembly, product validation, and testing within collaborative environments. Passionate about leveraging advanced design tools to develop high-quality automotive components.

EXPERIENCE

VOLO AUTO GROUP, WILMINGTON.

April 2023 -
Present

Automotive Engineer (Suspension, Brakes, Steering, and Vehicle Dynamics)

- Designed and developed suspension and alignment systems for high-performance EV prototypes.
- Assisted in the development of HV battery and battery tray.
- Created detailed 3D models and technical drawings for suspension components using SolidWorks.
- Assembled and evaluated prototypes, ensuring functionality, durability, and safety compliance.
- Provided cross-departmental technical support, including manufacturing and quality assurance.
- Created Systems layout for suspension, braking, and steering systems.
- Deployed my Automotive knowledge to ensure smooth integration of all mechanical components with the drivetrain.

AALT Levitated Transportation, Melbourne.

Dec 2022 -
April 2023

Automotive Engineer, Research

- Gathered Engineering and cost data on top 100 EV cells on the market.
- Tabulated and documented all the comparison aspects on Excel.
- Used the data to conduct thorough comparisons using spider charts.
- Compared all the results to select the top 3 cells.
- Conducted thermal simulations using ANSYS Fluent on the winning cells.
- Crafted professional documentation of the entire process.

Key Projects

Oct 2024 – April 2025

Suspension Test Rig Design and Development

- Designed a custom test rig for evaluating suspension components under increased vehicle loads.
- Conducted FEA simulations to optimize structural integrity and minimize weight.
- Fabricated and assembled the rig, ensuring compatibility with multiple tested components.

June 2024 – Jan 2025

Vehicle Dynamics Simulation

- Developed a Python-based simulation tool to analyze the effects of suspension geometry on handling.
(Pybullet)
- Utilized MATLAB for data analysis and visualizations to refine design parameters.
- Formulated a Lagrangian Mechanics-based mathematical suspension model to obtain and analyze suspension movements under studied scenarios.

EDUCATION

Feb 2025

Bachelor of Science in Automotive Engineering

AIN SHAMS UNIVERSITY | CAIRO, EGYPT

- Major: Mechanical Minor: Automotive

SKILLS

- CAD Design: SolidWorks (Advanced Techniques, Simulation), CATIA, Fusion 360.
- Engineering Analysis: Finite Element Analysis (FEA), Nonlinear Static/Dynamic Studies with Mathematical Modeling.
- Automotive Systems: Extensive knowledge about vehicle dynamics, performance tuning and handling.
- Fabrication: Welding, Machining, and generation of G-codes.
- Software and Coding: MATLAB, Python (Dynamics Visualization), CODESYS.

Certifications

- Certified courses on CAD and CAM with Fusion 360. (Autodesk)
- Field training on Jeep Cherokee and TOYOTA Fortuner assembly lines. (Arab American Vehicles)
- Workshop training on the servicing of Ground Airport Vehicles.

Professional References

- Angelo Senat, CEO, VOLO Auto Group, USA.
team@voloautogroup.com
- Jag Mann, Head, Finishing Touch Cars, UK.
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