

# DUCATI MONDANI

## Mechanical Engineer

### SUMMARY

Highly skilled electro-mechanical expert in robotics, automation, and laser systems. Proficient in PLC programming, electrical design, mechanical design, project management, testing, and validation. Proven track record of successfully managing complex projects. Strong problem-solver with excellent communication skills. Thrives in fast-paced environments where no two days are the same.

### PROFESSIONAL EXPERIENCE

#### Project Engineer (Mechanical and Electrical Systems)

May 2022–Present

Process Metrix Vesuvius, Pleasanton, CA

##### Role:

As a Project Engineer, I oversee complex, million-dollar laser system projects from start to finish. My role involves mechanical and electrical design, PLC solutions, and developing detailed electrical diagrams. I utilize my problem-solving skills to streamline operations, reduce costs, and exceed expectations through effective customer communication and negotiation.

##### Responsibilities:

- Managed projects from start to finish, including commissioning and site acceptance testing (SAT) for million-dollar laser systems, ensuring timely completion and exceeding expectations.
- Designed components for serviceability and manufacturing, adjusting CAD drawings to include lifting points and simpler machining, enhancing maintenance and production efficiency.
- Migrated custom PCB I/O board to a PLC off-the-shelf solution, streamlining operations and reducing costs by 20.42%.
- Constructed a standardized PLC program to be used as a template for Modbus communication with Windows-based software.
- Tested and validated positioning algorithms for beta software using advanced technologies like 3D cameras and laser scanners for data acquisition.
- Created a comprehensive scope of supply for large robotic manipulators and compact rooms, including technical details and specifications.
- Developed detailed electrical diagrams using Eplan software, designing and developing complex schematics from scratch.

### CONTACT

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### EDUCATION

#### The University of Nevada Reno, NV | May 2022

*BS in Mechanical Engineering  
Minor: Manufacturing Quality and  
Mathematics*

### RELEVANT SKILLS

Solidworks (CSWA)

Project Management

Microsoft Office

Simens PLC (STEP 7)

Rockwell PLC (Studio 5000)

E-Plan

The MathWorks MATLAB

Solidworks Simulation

Solid Edge

## **Driver Controls and Rear Suspension Lead**

August 2020–May 2022

University of Nevada, Reno, NV

### **Role:**

As a key member of the Formula SAE car club, I led efforts to design and develop a high-performance racing car. My responsibilities included managing project progress, facilitating collaboration with academic partners, and leading junior engineers in building the rear suspension and driver controls. Through this experience, I developed strong skills in project management, teamwork, and engineering design.

### **Responsibilities:**

- Spearheaded regular meetings with senior management to ensure project progress, resource allocation, and goal alignment.
- Facilitated collaboration with academic partners to secure a suitable location for club activities, leveraging educational initiatives.
- Designed and implemented an online communication platform using Discord, expanding reach to over 200 active members across STEM disciplines during the COVID-19 pandemic.
- Led junior engineers in developing the rear suspension and driver controls for a Formula SAE racing car, demonstrating project management and leadership skills.
- Collaborated with senior engineers to create a MATLAB script for optimizing suspension bar mounting configurations, resulting in improved performance and efficiency.
- Utilized SolidWorks simulation tools to analyze thermal distribution on brake components, ensuring optimal heat dissipation and overall system reliability.
- Conducted comprehensive SolidWorks simulations to validate the structural integrity of suspension components under various load conditions, guaranteeing their ability to withstand applied stresses.

## **Manufacturing Intern**

June 2014 – August 2015

Inverse Solutions Inc.

### **Role:**

As a skilled technician, I ensured high-quality manufacturing outcomes by conducting meticulous quality control inspections, utilizing technical drawing files and GD&T principles, and operating advanced instrumentation to verify part accuracy. I collaborated with CNC-machined parts and maintained attention to detail, guaranteeing precise production results.

### **Responsibilities:**

- Utilized expertise in quality control principles to guarantee high-quality manufacturing outcomes, verifying that all components met exacting standards of precision and accuracy.
- Collaborated with CNC-machined parts, assembling sub-components for integration into larger projects while maintaining attention to detail and commitment to excellence.
- Conducted meticulous quality control inspections on CNC-produced parts, thoroughly cleaning and deburring until ready for production.
- Leveraged technical drawing files and fundamental knowledge of Geometric Dimensioning & Tolerancing (GD&T) to ensure precise manufacturing alignment with exact specifications.
- Operated advanced instrumentation to verify part accuracy down to the thousandths of an inch, enforcing strict quality standards and precision measurements.