

Carlos C. Paviolo

CAREER PROFILE

Highly accomplished, results-oriented individual with expertise in developing reliable, efficient mechanical designs for precision custom machines and automated equipment in a variety of industries including pharmaceuticals, medical device production, aerospace, electronics, automotive manufacturing, and food processing.

Key competencies:

- Manufacturing Process Development & Scale-Up
- AutoCAD / SolidWorks/FEA
- Fixture & Precision Tool Design
- Industrial Machinery Controls Systems
- Special Purpose Machinery
- GD&T
- Project Management
- Machine Design & Automation
- Equipment & Process Validation
- Failure Modes, Effects and Criticality Analysis
- Design for Manufacturing (DFM)
- Statistical Analysis/Six Sigma

PROFESSIONAL EXPERIENCE

Covidien/Medtronic. Irvine, CA
Leading medical device manufacturer.

March 2020- Present

Principal Process Engineer, Automation

- Manage capital equipment projects. Specify and manage installation and start-up of new manufacturing equipment.
- Set-up manufacturing procedures, process instructions, and provided training to machine operators.

Mechanical Engineering Independent Contractor

November 2019- February 2020

- **Telescent:** Designed a quick-disconnect mechanism for a fiber optic gripper.
- **Plenty Farms:** Developed user requirement specification for a custom washing machine and negotiated purchase terms with vendors.
- **Issocket Autoswitch:** Designed an electrical auto-switch that enables the power switch/button on a tool to automatically turn on or off a vacuum or other accessories.

Telescent. Irvine, CA
Fiber optics Network Topology Manager (NTM) manufacturer startup

August 2017- October 2019

Principal Mechanical Design Engineer

November 2017- October 2019

- Completed the design of the NTM and a full documentation package to transfer production to a Tier-1 contract manufacturer. Managed all engineering aspects of the project by supervising activities performed by junior engineers and contractors. Coordinated engineering activities and acted as liaison engineer between Telescent and the contract manufacturer.
- Led the effort to perform a complete redesign the Network Topology Manager (NTM) refining the design from a basic conceptual prototype to a sophisticated production machine that achieved or exceeded the company's reliability and performance goals.
- Designed tooling, fixtures, gauges, and assembly equipment.
- Evaluated data on manufacturing process leading to product yield and reliability enhancement.
- Initiated, maintained, and managed vendor relationships. Coordinated with vendors and resolved issues.
- Installed, implemented, and administered Telescent's SolidWorks PDM Standard system.

Mechanical Design Engineering Consultant

August 2017- November 2017

- Implemented a complete overhaul of a two-axis robotic arm by redesigning major components after performing power transmission, stress, reliability, and tolerance analyses. Increased the reliability of the robotic arm from a few thousand cycles to failure to consistently exceeding 700k cycles without failures.

Covidien/Medtronic. Irvine, CA
Leading medical device manufacturer.

June 2015- August 2017

Principal Process Engineer, Automation

- Developed and qualified two customized NC laser welding machines to weld 500µ platinum markers onto nitinol stents.

- Developed and qualified three customized precision NC laser machines to cut neurovascular stents achieving cutting tolerances of $\pm 25\mu$.
- Developed and qualified two customized NC laser welding machines to weld 400 μ platinum markers onto stents.
- Designed an automated fluidized bed heat treatment oven to process Nitinol neurovascular stents.

B Braun Medical. Irvine, CA

June 2014- June 2015

Leading manufacturer of IV solutions, drug delivery systems, and clinical nutrition solutions.

Equipment Engineering Manager

- Led a team of technical engineering subject matter experts in support of manufacturing operations.
- Implemented and maintained policies and procedures for designing, developing and implementing equipment.
- Ensured that all equipment engineering projects, initiatives and processes were in compliance with established policies and objectives.
- Established specifications for new equipment or modifications associated with improvement of existing equipment reliability and Overall Equipment Effectiveness.
- Integrated a robotic pick and place system along with a synchronized conveyor to automate IV bags packaging operations.

Applied Medical Resources. Rancho Santa Margarita, CA

July 2006 – June 2014

Vertically integrated manufacturer of minimally invasive surgical medical devices.

Director of Automation Design

- Performed feasibility studies to examine justification of project through cost benefit analysis. Proposed engineering development schedules, budgets and obtained CEO and GM approvals.
- Coordinated the mechanical design of the new projects, and manage all the projects during their development and implementation, while still retaining hands-on design functions for certain projects.
- Developed standardized flexible feeding workstations used in multiple assembly lines (20 workstations built). The workstation platforms integrated vision-guided robots and flexible feeders to perform fast and precise part sorting and assembly operations. The stations allow for fast line changeovers, generating a significant reduction in labor, tooling, and engineering costs.
- Participated in almost 100 custom automation projects ranging from simple tabletop fixtures to fully automated assembly lines.

Automation Engineering Manager

- Led a project and designed equipment for a fully-automated precision blade stamping, heat treating, grinding, inspecting, and packaging line. Machines integrated vision-guided grinding, automated electro polishing gantry robots, pick and place robots, and automated laser metrology to produce 120 stainless surgical blades per hour with minimal operator intervention.
- Mentored and coached junior team members with engineering principles and procedures that apply to machine design, part handling, robotic end-of-arm-tool design, semi-automated work cell layout, robotic work cell layout, process flow, operator ergonomics, and machine aesthetics.
- Designed fixtures, custom precision machines, and analyzed process capability.
- Directly supervised engineering team members. Responsible for providing training, direction, and oversight.

ACADEMIC BACKGROUND

Brandman University, Part of the Chapman University System- Irvine, CA

-MBA, Organizational Leadership

UC Irvine – Irvine, CA

- Project Management Certificate Program

Rosario National University – Argentina

- Bachelor of Science in Mechanical Engineering

Certifications and Training

- Project Management Institute (PMI) - Project Management Professional (PMP) License #1618036
- Laser Institute of America (LIA) - Laser Safety Officer With Hazard Analysis (LSO)

COMPUTER SKILLS

Microsoft (Word, Excel, PowerPoint, MS Project), AutoCAD, SolidWorks, SolidWorks PDM, SolidWorks Simulation (FEA), SolidEdge, Onshape, Fusion360, SAP, RSLogix, Panasonic FPWinPro (PLC ladder logic), GTWIN (HMI programming), Minitab.