

CYRIL MALAYIL TOM THARIYAN

Product Design | Manufacturing | Project Management | Analysis

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PROFESSIONAL SUMMARY

Mechanical Engineer with 6+ years of experience spanning product and mechanical systems design, CAD/CAE modeling, FEA, manufacturing support, mechatronics, robotics research and multidisciplinary project coordination. Brings hands-on experience with SolidWorks, ANSYS, MATLAB, Revit, precision flow instrumentation, additive manufacturing and vehicle systems. Combines analytical rigor with practical build, validation and delivery experience across the United States and the UAE.

CORE ENGINEERING CAPABILITIES

Product Design & CAD: SolidWorks, PTC Creo, Siemens NX, AutoCAD MEP, Revit, KeyShot, GD&T, design for manufacturing (DFM)

Simulation & Controls: ANSYS Mechanical APDL & Workbench, finite elements analysis (FEA), computational fluid dynamics (CFD), MATLAB, C++, CoppeliaSim, kinematics, system control

Manufacturing & Prototyping: Additive manufacturing, precision instrumentation, machine-shop practice, calibration, assembly and welding

Design Project Management: Design reviews, milestone tracking, technical documentation, cross-team coordination, Newforma PM and Bluebeam

PROFESSIONAL EXPERIENCE

Mechanical Engineer

Nov 2024 - Present

RTM Engineering Consultants | Orlando, FL

- Engineer boiler, booster-pump and fire-suppression systems for multi-family and high-rise projects using hydraulic and thermodynamic calculations with Revit-based 3D modeling.
- Coordinate mechanical designs with structural, electrical and piping engineers, validating system integration against International/Florida Building Codes and NFPA standards, across concurrent jurisdictions.
- Specify high-efficiency HVAC equipment by balancing performance requirements, energy optimization and lifecycle cost targets.

Mechanical Engineer

May 2023 - Nov 2024

RGD Consulting Engineers | Jupiter, FL

- Designed and documented piping systems for SMEP projects in AutoCAD MEP and Revit, supporting commercial and residential delivery under International and Florida Building Codes.
- Performed hydraulic sizing for piping networks, water heaters and steam generators, plus ASHRAE-based cooling-load and energy-code analyses.
- Managed project documentation and design milestones in Newforma while coordinating multidisciplinary deliverables to client deadlines.

Engineering Intern

May 2022 - Aug 2022

Malema, a PSG Brand | Boca Raton, FL

- Created GD&T-compliant SolidWorks drawings for precision flow instruments, vortex flow meters, pressure transducers and adjustable flow switches.
- Updated pulse-module firmware and executed pass/fail validation of ultrasonic flow-meter sensors against current and voltage specifications.
- Applied calibration and assembly procedures to flow meters and valve-motor assemblies used in biopharmaceutical, semiconductor and industrial applications.

Mechanical Intern, Mechatronics Division

May 2021 - Aug 2021

Fractal Systems | Dubai, UAE

- Designed SolidWorks cladding and integrated hardware enclosures for the Microsoft Selfie Screen; led on-site installation at GISEC and resolved structural conflicts through rapid iteration.
- Developed custom interactive products for Expo 2020 Dubai, including a lighting-synchronized smart bin for DULSCO and exhibition components for UAE University.
- Supported PCB integration, cable management and electronics selection, and assembled E-Foil watercraft for Mantafoils customer distribution.

SELECTED DESIGN & RESEARCH PROJECTS

Variable Resistance Suit (VARS) - Graduate Research Assistant

2021 - 2023

WEAR Lab, University of Central Florida

- Designed SolidWorks components for a human-assistive exoskeleton intended for rehabilitation and athletic training.
- Helped digitize the mechanism in CoppeliaSim to output real-time kinematic and resistance parameters during dynamic use.
- Proposed and analyzed ankle, knee and hip linkages for a vertical-jump augmentation device, supporting multidisciplinary design trade-offs.

Verification of Additively Manufactured Parts - Senior Design

2021

Florida Institute of Technology

- Led the Atmospheric Control sub-team within a nine-member group, designing active print-layer cooling and chamber heating to reduce FDM warping and shrinkage.
- Produced subsystem CAD, led design reviews, tracked milestones and helped resolve cross-team delivery conflicts.

RoboMech - VEXU Robotics Competition

2019 - 2020

Florida Institute of Technology

- Designed and built autonomous and driver-controlled mechanisms optimized for intake, stacking, transport and competitive scoring.

Formula SAE - Formula IC Vehicle

2018 - 2019

Florida Institute of Technology

- Contributed to suspension geometry optimization and braking-system activation on the FP19 vehicle; supported chassis welding, fabrication and component assembly, in reference to ASME Y14.5 standard.

EDUCATION

Master of Science, Mechanical Engineering

May 2023

University of Central Florida | Orlando, FL

Relevant study: FEA, fracture mechanics, mechatronics, system control, continuum mechanics, dynamics and mathematical methods.

Bachelor of Science, Mechanical Engineering

May 2021

Florida Institute of Technology | Melbourne, FL

Relevant study: DFM, advanced CAD and automation, control systems, vibrations, theory of machines, machine-element design, solid modeling and materials science.

ADDITIONAL TOOLS & CERTIFICATIONS

Tools: Trace 700 & 3D, Energy Gauge, Manage2Manage ERP, Microsoft Visual Studio and Microsoft Office Suite.

Certifications: Machine Shop I & II, Lenovo Workstation & V-Series Desktop, Siemon Cabling System Designer/Installer, Daikin Equipment and Fortinet Solutions.