

# CYRIL MALAYIL TOM THARIYAN

Mechanical Engineer

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## PROFESSIONAL SUMMARY

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Mechanical Engineer with 6+ years of experience spanning mechanical systems design, CAD/CAE modeling, FEA simulation, and multidisciplinary project coordination. Demonstrated expertise in SolidWorks, ANSYS, MATLAB, and Revit applied to robotics research, mechatronics product development, building systems, and precision manufacturing. Seeking to leverage skills in autonomous systems, kinematic analysis, additive manufacturing, and fluid/hydraulic systems design to deliver high-impact solutions in Robotics, Automotive Engineering, Aerospace Systems, and Advanced Manufacturing.

## TECHNICAL SKILLS

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<b>CAD / CAE</b>	SolidWorks · Autodesk AutoCAD MEP · Autodesk Revit · PTC Creo · Siemens NX · ANSYS (Mechanical APDL & Workbench) · KeyShot 3D Rendering
<b>Simulation</b>	Finite Element Analysis (FEA) · Computational Fluid Dynamics (CFD) · CoppeliaSim (robot simulation) · Trane Trace 700 & 3D · Energy Gauge
<b>Programming</b>	MATLAB · C++ · Microsoft Visual Studio
<b>Standards</b>	GD&T · International Building Code (IBC) · Florida Building Code · ASHRAE · SMEP Coordination
<b>Systems / Tools</b>	Newforma PM · Manage2Manage ERP (M2M) · BlueBeam · Microsoft Office Suite
<b>Certifications</b>	Machine Shop I & II · Lenovo Workstation & V-Series Desktop · Siemon Cabling System Designer/Installer · Daikin Equipment · Fortinet Solutions

## RESEARCH & PROJECT HIGHLIGHTS

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**Graduate Research Assistant** 2021 to 2023

*Wearable Engineering & Assistive Robotics (WEAR) Lab, University of Central Florida · Orlando, FL*

- Designed and modeled mechanical components in SolidWorks for the Variable Resistance Suit (VARS), a human-assistive exoskeleton targeting rehabilitation and athletic training applications.
- Collaborated with a multidisciplinary graduate team to digitize the VARS mechanism into CoppeliaSim, developing a real-time application to output kinematic and resistance parameters during dynamic use.
- Contributed mechanism proposals and linkage analysis for ankle, knee, and hip systems for a human vertical jump augmentation device, informing design trade-off decisions across the research team.

**Senior Design: Verification of Additively Manufactured Parts** Florida Institute of Technology

- Led the Atmospheric Control sub-team within a 9-member senior design group to design a novel active print-layer cooling and chamber-heating system (ACU) mitigating warping and shrinkage in FDM 3D-printed parts.
- Produced full CAD designs for the sub-system; managed design reviews, milestone tracking, and cross-team conflict resolution through delivery.

**RoboMech: VEXU Robotics Competition** Florida Institute of Technology

- Designed and built competitive robots with autonomous and driver-controlled motion systems for VexU Tower Takeover, optimizing intake, stacking, and transport mechanisms for competitive scoring.

**Formula SAE: Society of Automotive Engineers** Florida Institute of Technology

- Contributed to suspension geometry optimization and braking system activation on the team's Formula IC vehicle; supported chassis fabrication including welding and component assembly.

## PROFESSIONAL EXPERIENCE

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**Mechanical Engineer** May 2024 to Present

*RTM Engineering Consultants · Orlando, FL*

- Engineer boiler, booster pump, and fire suppression systems for multi-family and high-rise construction projects, performing code-compliant hydraulic and thermodynamic calculations with Revit-based 3D modeling.
- Drive cross-functional mechanical coordination with structural, electrical, and piping engineers to validate system designs against International and Florida Building Codes across multiple concurrent jurisdictions.
- Specify high-efficiency mechanical HVAC equipment, balancing performance requirements with energy optimization and lifecycle cost targets.

**Mechanical Engineer**

May 2023 to Nov 2024

*RGD Consulting Engineers · Jupiter, FL*

- Designed and documented piping systems for SMEP projects using AutoCAD MEP and Revit, ensuring full compliance with International and Florida Building Codes on commercial and residential projects.
- Executed hydraulic sizing calculations for piping networks, water heaters, and steam generators; conducted ASHRAE-based cooling load analyses and energy code compliance reviews.
- Managed project documentation and design milestone tracking in Newforma, coordinating deliverables across multi-discipline engineering teams to meet client deadlines.

**Mechanical Intern, Mechatronics Division**

May 2021 to Aug 2021

*Fractal Systems · Dubai, UAE*

- Designed cladding and integrated hardware enclosures for the Microsoft Selfie Screen interactive display using SolidWorks; led on-site installation at Expo 2020 Dubai (GISEC), resolving structural conflicts through rapid design iteration.
- Engineered custom interactive product designs for Expo 2020 Dubai, including a lighting-synchronized smart bin (DULSCO) and exhibition pavilion components for UAE University.
- Collaborated on PCB integration, cable management, and embedded electronics component selection within the mechatronics division; assembled E-Foil watercraft units for Mantafoils global customer distribution.

**Engineering Intern**

May 2022 to Aug 2022

*Malema, a PSG Brand · Boca Raton, FL*

- Engineered SolidWorks drawings for precision flow measurement instruments, vortex flow meters, pressure transducers, and adjustable flow switches to GD&T standards.
- Upgraded pulse module firmware and conducted pass/fail validation testing on ultrasonic flow meter sensors, verifying current/voltage output specifications against performance benchmarks.
- Applied calibration and assembly procedures for ultrasonic flow meters, rotary meters, and chemical/slurry valve-motor assemblies serving bio-pharmaceutical, semiconductor, and industrial clients.

**EDUCATION****Master of Science, Mechanical Engineering**

May 2023

*University of Central Florida · Orlando, FL*

Relevant Coursework: Finite Element Analysis, Fracture Mechanics in Design, Mechatronic Systems, System Control, Continuum Mechanics, Intermediate Mechanics of Materials, Intermediate Dynamics, Mathematical Methods in ME/AE

**Bachelor of Science, Mechanical Engineering**

May 2021

*Florida Institute of Technology · Melbourne, FL*

Relevant Coursework: Design for Manufacturing (DFM), Advanced CAD & Automation, Control Systems, Vibrations, Theory of Machines, Machine Element Design, Solid Modeling, Materials Science, C++ Programming