

SUMMER ROMAN NICKS

MECHANICAL ENGINEER

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SUMMARY

Innovative and hands-on mechanical engineer with 7+ years of experience designing test fixtures, opto-mechanical hardware, and automation solutions for imaging, manufacturing, for various applications. Proven ability to lead cross-functional teams, develop creative solutions, and drive cost-saving initiatives. Passionate about camera systems, testing automation, and fixture design. Strong background in GD&T, DFM, CAD design (SolidWorks), and manufacturing processes. Highly motivated to find the best solutions through rigorous testing, collaboration, and iteration while ensuring precision and efficiency in every project.

EDUCATION +

- B.S. in Mechanical Engineering
University of Colorado – Boulder
Graduated 2017
- COLORADO EIT (FE certified)
- ASME Y14.5 GD&T (2019)
- Optomechanical Systems
Engineering Course (CPIA 2023)

INTERESTS

- 📷 Photography
- 🤖 Robotics
- 🔩 Metalworking
- 🛠️ Maker Projects

EXPERIENCE

Mechanical Engineer

Imatest LLC

April 2021 - Present

- Designed and developed custom test fixtures and jigs for image quality testing of cameras and sensors, improving testing accuracy and reducing setup time.
- Led the design and simultaneous development of the Benchtop Test Stand (BTS), strategically incorporating multiple testing functions (endoscope testing, stray light analysis, modular optical testing) into a single solution—exceeding initial project requirements and increasing market adoption.
- Developed thermal management solutions for high-powered LED light sources used in camera testing, optimizing heat dissipation via TEC, heat sinks, and fans.
- Owned the entire product lifecycle, from defining product requirements and stakeholder collaboration to design, validation, and launch—demonstrating strong product management expertise.
- Negotiated vendor contracts, reducing material costs by 25% and lead times by 50%.
- Improved CAD standards and implemented PDM system, eliminating overwritten work and increasing efficiency.
- Conducted failure analysis (FA) and vibration/load testing on fixtures using accelerometers and real-world validation methods.

Results & Impact: Delivered a high-precision test system that expanded Imatest's market share, boosted revenue, and enabled new forms of testing, supporting R&D efforts across industries.

Manufacturing Engineer

Specialty Products Company

May 2018 - August 2019

- Designed manufacturing jigs and test fixtures to optimize production workflow and ensure precise, repeatable machining results.
- Led UR Cobot automation project for CNC machine tending, increasing production efficiency and reducing labor dependency.
- Collaborated with quality assurance to troubleshoot machining failures, applying GD&T principles and tolerance stack-up analysis.
- Implemented lean manufacturing processes, reducing CNC setup time by 60%.

Results & Impact: Enabled a more scalable, automated production workflow that improved consistency and freed up skilled machinists for complex operations.

Systems Engineer

Senior Project: NBA Milwaukee Bucks sideline chair

August 2016 – May 2017

Engineering Intern

Phase IV Engineering

May 2015 – August 2015

SKILLS

Test Fixture & Tool Design

- Custom jigs & rapid prototyping
- Alignment tools
- Modular test fixtures

Optomechanics & Camera Systems

- Image quality testing
- Camera sensor alignment
- Stray light analysis

Automation & Manufacturing

- High-volume CNC workflows
- UR Cobot automation
- Process optimization

Thermal Management

- TEC cooling
- Heat dissipation solutions
- Material selection

CAD & Design Tools

- SolidWorks
- Creo/Pro-E
- AutoCAD

Programming & Data Analysis

- Python, C++
- MATLAB, LabVIEW
- Automation scripting

Product Development

- Requirements definition
- Supplier/vendor collaboration
- Lifecycle management

Failure Analysis & QC

- Root cause analysis
- Vibration/load testing
- Tolerance analysis