Ned Caffarra

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Technical Leader and Mechanical Engineer

Summary

Dynamic Leader and Engineer with 8+ years of progressive leadership experience spanning military operations and commercial product development. Extensive experience in product design, development, validation, and manufacturing processes. Proven expertise in leading New Product Introduction (NPI) and Continuous Product Improvement (CPI) projects, optimizing designs for cost, efficiency, and manufacturability. Experienced in SolidWorks, AutoCAD, and finite element analysis (FEA), with a strong background in collaborative product and process development. Adept at communicating complex technical concepts to cross-functional teams, suppliers, and stakeholders, driving project success in dynamic environments. Combines technical expertise with strong leadership capabilities to drive organizational success in fast-paced, high-stakes situations.

Core Competencies

• Mechanical Design & Validation: Product system and component design
• Product Development: NPI, CPI, prototype testing, and Lifecycle management
• Technical Leadership: Project management, team coordination, process optimization, and risk assessment
• Collaboration: Cross-functional team leadership, supplier coordination, and customer engagement

Professional Experience

MJC Inc., Cartersville, GA Product Engineer, August 2022–Present

• Lead NPI projects for HVAC systems, designing evaporator coils, filter racks, and optimizing for cost, space, and manufacturability.
• Spearhead CPI initiatives, conducting cost-benefit analyses and implementing corrective actions to enhance production efficiency.
• Manage UL certification for three products, performing in-house testing, validating designs, and preparing documentation to meet industry standards.
• Interpret regulations, codes, and standards to ensure compliance in manufacturing and operation.
• Develop and validate manufacturing processes for A2L refrigerant conversion, ensuring compliance with codes and standards through factory layout redesign.
• Utilize SolidWorks and AutoCAD for mechanical design and detailing, creating detailed drawings and models for production.
• Conduct FEA to validate structural integrity of metal components.
• Collaborate with quality and fabrication teams to identify KPIs, resolve QA issues, and improve production workflows.
• Design jigs, templates, and tools to streamline manufacturing, reducing production time and costs.
• Conduct root cause analysis, DFMEA, and PFMEA.

United States Navy, Various Locations Engineering & Leadership Roles, 2016–2022

• Led cross-functional teams in high-stakes environments, managing auxiliary systems (e.g., HVAC, refrigeration, cranes) and overseeing maintenance and validation processes.
• Directed product lifecycle management for shipboard systems, ensuring operational readiness through rigorous testing and corrective actions.

• Coordinated with external stakeholders, including base security and suppliers, to execute force protection exercises and system upgrades.
• Streamlined workflows during maintenance phases, optimizing resource allocation and project timelines for 57 ship spaces.
• Trained and mentored junior sailors, fostering technical excellence and leadership development.

Prior Experience

Integrated Project Services (IPS), Blue Bell, PA Mechanical Co-op, April–September 2014

• Designed HVAC system layouts using Revit and AutoCAD, performing pressurization, heat load, and flow calculations to meet client specifications.
• Validated duct and pipe sizing for optimized system performance and manufacturability.

Roberts Filter Group, Media, PA Engineering Intern, April–September 2013

• Created 2D/3D filter layouts using AutoCAD Inventor and fabricating sheet metal prototypes.
• Field-tested prototypes, analyzing performance data in Excel to optimize designs for industry standards.

Soft Skills

• Effective Communication: Clearly convey complex technical information to diverse audiences, including customers, suppliers, and cross-functional teams.
• Collaboration: Build strong relationships with multi-disciplinary teams and external stakeholders to achieve project objectives.
• Problem-Solving: Apply analytical thinking to resolve engineering challenges and implement innovative solutions.
• Adaptability: Thrive in fast-paced environments, adjusting to evolving project needs and technologies.
• Leadership: Inspire and guide teams to deliver high-quality results under tight deadlines.

Education

Bachelor of Science in Mechanical Engineering (B.S.M.E.)
Drexel University, Philadelphia, PA, Graduated 2016

Technical Skills

• Software: SolidWorks, AutoCAD, Inventor, Revit, MATLAB, Python, Microsoft Office (Word, Excel, PowerPoint, Project)
• Analysis: Finite Element Analysis (FEA), cost-benefit analysis, KPI development; ChatGPT, Claude, Grok for design optimization and technical problem-solving
• Manufacturing: Prototype fabrication, Laser, Press Brake, Schroder Folder, Jig/template design

Leadership Philosophy

Dedicated to fostering innovation through collaborative leadership, technical excellence, and continuous learning. Proven ability to translate complex engineering challenges into actionable solutions while developing team capabilities and driving organizational growth. Adaptable in fast paced high stress environments.