

Thomas Reesbeck

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OBJECTIVE & QUALIFICATIONS

ENGINEERING, BUSINESS, AND TECHNICAL LEADERSHIP EXPERIENCE

Accomplished Product Development Engineer/Team Leader with over 15 years of increasing responsibilities and success leveraging small teams toward pioneering disruptive product solutions in niche industries. Primary areas of technical experience include submersible, centrifugal, and water pump design, as well as water filtration, battery / power management systems, and consumer electronics. The products have stabilized & grown revenues for every small business on the journey leading to acquisitions and spin-offs.

EXPERTISE

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|------------------------------|-------------------------------|------------------------------|
| ■ CAD Solidworks, ProE, etc. | ■ EVT / DVT / PVT / FMEA | ■ Quality & Sustainability |
| ■ CFD Comp. Fluid Dynamics | ■ Experimental System Optim. | ■ Rapid Prototyping (A&B) |
| ■ Coaching & Public Speaking | ■ FEA Finite Element Analysis | ■ RCA Root Cause Analysis |
| ■ DFA Design for Assembly | ■ PLM Product Lifecycle Mng. | ■ Resource & Risk Management |
| ■ DFM Design for Manuf. | ■ PM Project Management | ■ Tolerance Stack / G.D.&T. |
| ■ DOE Design of Experiments | ■ Product Strategy | ■ Vendor Relations |
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CAREER

CHESSTREES LABS

2022 - 2024

Engineering Manager

Canton, MI

- Built an engineering team from the ground up; developing and managing the budget, creating and implementing hiring strategies, conducting interviews, and establishing processes and standards to ensure team efficiency and project success.
- Developed engineering solutions and new products for the client specific markets. Responsibilities included market research, CAD design, and form strategies & methodologies for NPD/NPI.
- Led design and development of innovative submersible water products, integrating electro-mechanical components for international markets; involving cross-functional collaboration, rigorous testing, and ensuring compliance with global standards.

KOKIDO LIMITED TECHNOLOGY

2022-2024

Head of Technical Product Development

Hong Kong, HKG

- Mapped out strategic product innovation plan for the next 3 years around changing EU 2026 regulations and the evolving global market of submersible pool tools.
- Organized systems engineering concepts for the Hong Kong design team to implement product improvements across 62 consumer electronics products, including robotic pool cleaners and battery-powered submersible pumps.
- Led a global team to relocate manufacturing of a consumer electronics product, engineering redesigns for quality improvements, establishing EVT & DVT while reviewing QA/QC & PVT.
- Reduced customer return rates from 19% to 5% & reduced unit costs from \$26 to \$22 USD on a 100,000+ unit product by implementing a new supply chain and new manufacturing facility in 6 months.

STAGE 2 CONTRACT ENGINEERING

2015- 2022

Senior Design Engineer (2018-2022)

Farmington Hills, MI

Product Development Engineer (2015-2018)

- Led design development and implementation of modern prototyping methods, both additive and subtractive manufacturing, locally and globally with teams in India, China, and across the United States.
- Developed a novel line of filtration systems and filter products, including interchangeable sediment, carbon, catalytic carbon, calcite, hollow fiber membrane, and ultraviolet light denaturing filters.
- Tested completed projects for functionality and implemented changes to production methods to rectify issues in final products. HANS Premium Water was a spin-off business taken from concept to business.

QED ENVIRONMENTAL SYSTEMS (GRACO)

2012- 2015

Product Development Engineer

Dexter, MI

- Led the design of a novel portable groundwater sampling pump, PowerPro ESP, combining technologies from small fuel pumps, battery pool pumps, and safe water sampling materials.

- Integrated novel optical testing measures to gauge shaft and seal performance, then incorporated them into a Design of Experiments (DOE) for seal, shaft, and assembly lab testing.
- Reviewed electromechanical designs from internal and external sources for feasibility and cost studies.

WATER TECH CORP

2010- 2012

Mechanical Engineer

East Brunswick, NJ

- Utilized fluid analysis software, LabView, SOLIDWORKS, 3D Printing Additive Manufacturing, and GD&T for precise documentation and experimental pump testing and optimization.
- Developed and implemented quick-turn Design of Experiments (DOE) to optimize pool vacuum performance through experimental methods.

RUTGERS UNIVERSITY

2007- 2010

Experimental Fluids Lab & Physics Lab Assistant

Piscataway, NJ

KULITE SEMICONDUCTOR PRODUCTS

2008- 2008

Drafting Engineer

Leonia, NJ

- Converted >10,000 paper mechanical drawings into digital 2D and 3D CAD models per ASME standards.

PATENTS AND PUBLICATIONS : [HTTPS://WWW.PATENTGURU.COM/SEARCH?Q=REESBECK](https://www.patentguru.com/search?q=reesbeck)

Patent:	Power Pack, Patent No. US 11811259 B2,	2023-11-07
Patent:	Water treatment system, Patent No. US 11802061 B2,	2023-10-31
Patent:	Groundwater Sampling Pump, Patent No. AU2014360502 B2,	2018-06-28
Patent:	Groundwater Sampling Pump, Patent No. EP3077677 B1,	2019-11-13
Patent:	Adaptor for use with spa cleaner accessories, Patent No. USD 683918 S1,	2013-06-04
Publication:	Experiments on the vortex wake of a swimming knifefish. Exp Fluids 54, 1588	2013

PERSONAL PROJECTS

SYSTEM - YOUTH & VETERAN CRISIS PATIENT MEDICAL HISTORY COMMUNICATION	2024 - 2024
<i>Project Management, Problem Statement, Current Solutions Review, Solution Implementation</i>	
SYSTEM - KICAD BMS DESIGN FOR MULTIMODAL MODULAR TOOLS	2024 - 2024
<i>PCB design, Battery Management System review, active & passive battery balancing & charging</i>	
PRODUCT - RE-FREEZABLE THROWABLE DOG TOY SYSTEM	2023 - 2024
<i>Product development focused on material selection & design for cost reduction and durability globally</i>	
DESIGN - TABLETOP BOARD GAMES USING AI Art Tools	2019 - 2024
<i>Modern design & manufacturing tools applied to a highly price sensitive and competitive market</i>	

LEADERSHIP

FOUNDER - CHESS TREES INC.

2022 – 2024

- Leadership of a local engineering team, delivering prototypes and feedback to international clients.
- Integrated & mentored engineering college graduates into cross-functional teams for client projects.
- Utilized modern prototyping tools, including 3D Printing (FDM/FFF/SLA/SLS), motor and battery selection, kiCad, Arduino, ESP32, and AI art generation with local Stable Diffusion.

FOUNDER - WOLVERINE STRENGTH & CONDITIONING INC.

2012 – 2018

- Co-Founded a first month profitable service business, growing to >300 active automated subscriptions
- Led organization with 13 employees, 7 days a week operations, and 150 daily customers
- Implemented strategies for branding, product, marketing, sales, and staff development while optimizing growth and minimizing churn and customer acquisition costs.
- CrossFit Level 1 2012, CrossFit Level 2 2018, CrossFit Affiliate Manager 2012 to 2018

EDUCATION

MSI - Project Manager Essentials Cert. 2024 & Project Management Institute Member since	2021
M.S. in Mechanical Engineering, Rutgers University, Piscataway, NJ,	2013
B.S. in Mechanical Engineering, <i>cum laude, J&J slade scholar</i> , Rutgers University, New Brunswick, NJ,	2009

References provided upon request