

River Huff

Thermal Architect, Thermal Management Solutions

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STRENGTHS

- ⚙️ **Thermal Architecture**
A feasibility review once exposed a difficult tradeoff, and clear architecture choices kept teams moving with confidence.
- 👥 **Cross Functional Leadership**
Design and manufacturing teams reached decisions faster after structured reviews made thermal concerns easier to discuss.
- 🔧 **CFD Analysis**
CFD work turned uncertain fluid behavior into evidence engineers could use during architecture and validation decisions.
- 🔧 **Manufacturable Design**
A practical DFM review helped shift attention from elegant analysis toward components teams could build consistently.
- 🎓 **Technical Mentoring**
Engineers frequently sought guidance on thermal analysis, and shared review habits improved team confidence.

SKILLS

Thermal Management

Liquid Cooling CFD

Fluid Dynamics DFM

Product Architecture HPC Systems

Risk Assessment

Feasibility Studies

Customer Requirements

Reliability Analysis

Thermal Architecture

Validation Planning

Cross Functional Leadership

Mission Critical Systems

SUMMARY

Thermal architect with nine years creating liquid cooling solutions for **high performance computing**, specialized equipment, and mission critical applications. Experience covers **thermal fluid architecture**, **feasibility studies**, CFD simulation, fluid dynamics, reliability analysis, customer requirements, and **design for manufacturability**. Leads engineering work from concept through implementation, connecting analytical findings with practical product decisions and validation plans. Coordinates design, manufacturing, and engineering stakeholders through reviews, tradeoff discussions, risk assessments, and component requirements. Mentors engineers on thermal analysis practices and communicates technical decisions clearly across functions. Brings a thoughtful, hands on approach to solving difficult thermal constraints while keeping performance, reliability, manufacturability, and customer needs aligned.

EXPERIENCE

Thermal Architect

Harbor Thermal Technologies 📅 February 2021 - Present 📍 Boston, MA

Owens thermal architecture for advanced computing applications, guiding feasibility work, CFD analysis, requirements definition, validation planning, and cross functional engineering reviews from concept through implementation.

- Architected **liquid cooling** solutions for advanced computing applications and mission critical thermal requirements.
- Led thermal **feasibility studies** using performance tradeoffs to guide practical **product architecture** decisions.
- Developed CFD analyses that clarified fluid behavior and supported engineering architecture reviews.
- Coordinated design and manufacturing reviews, helping teams resolve thermal implementation concerns early.
- Defined thermal component requirements and validation activities for reliable product development decisions.
- Mentored engineers on thermal analysis practices, building shared confidence in technical review discussions.

Senior Thermal Engineer

Northeast Advanced Systems 📅 June 2018 - January 2021 📍 Waltham, MA

Supported specialized equipment platforms through thermal concept development, fluid behavior analysis, testing, documentation, manufacturability reviews, and risk mitigation planning with engineering stakeholders.

- Designed **thermal management** solutions for specialized equipment platforms from concept through testing.
- Evaluated **fluid dynamics** behavior to identify cooling performance tradeoffs during development reviews.
- Supported product development activities by connecting thermal analysis with validation planning and test results.
- Applied **design for manufacturability** principles to improve practical thermal component production.
- Created technical documentation that gave engineering stakeholders clear design and analysis context.
- Reviewed development risks and mitigation plans, helping teams address reliability concerns before release.

PROJECTS

Liquid Cooling Architecture Study 📅 2023

Evaluated liquid cooling architectures for advanced computing applications, combining feasibility analysis, CFD modeling, requirements review, and validation planning.

LANGUAGES

English Native

Spanish Intermediate

MY CAREER



- Thermal Architect at Harbor Thermal Technologies (5.6 Years)
- Senior Thermal Engineer at Northeast Advanced Systems (2.6 Years)

Manufacturable Thermal Equipment Design 2020

Applied design for manufacturability principles to specialized equipment cooling designs, balancing fluid performance, component practicality, and development risk.

LEADERSHIP & AWARDS

- Recognized by engineering leadership for clear thermal architecture decisions during advanced computing development reviews.
- Selected to mentor engineers on thermal analysis practices and practical review preparation.
- Earned stakeholder trust by connecting CFD findings with manufacturable product decisions.

EDUCATION

Bachelor's Degree in Mechanical Engineering

Boston University GPA: 3.7 2018 Boston, MA

Coursework: Thermal fluid systems, fluid dynamics, heat transfer, mechanical design

CERTIFICATIONS

- CFD Simulation Certificate 2020
- Design for Manufacturability Certificate 2021

TECHNICAL SKILLS

- **Thermal Analysis:** CFD, heat transfer, thermal modeling
- **Cooling Systems:** liquid cooling, thermal management, fluid cooling
- **Fluid Dynamics:** fluid behavior, flow analysis, pressure drop
- **Engineering Design:** product architecture, mechanical design, component design
- **Manufacturing Design:** design for manufacturability, production review, component release
- **Requirements Engineering:** customer requirements, performance goals, reliability goals
- **Validation Engineering:** validation activities, test planning, performance testing
- **Risk Engineering:** risk assessment, mitigation planning, reliability analysis
- **Computing Platforms:** high performance computing, advanced computing, data centers
- **Engineering Collaboration:** design reviews, manufacturing reviews, cross functional leadership

PROFESSIONAL AFFILIATIONS

- Member, American Society of Mechanical Engineers, thermal engineering community.
- Participant, engineering peer forum focused on fluid dynamics and cooling system design.

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST