

River Huff

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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

February 2021 - Present

Harbor Thermal Technologies

Boston, MA

Owns 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

June 2018 - January 2021

Northeast Advanced Systems

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.

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

2018

Boston University GPA: 3.7

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

SKILLS

- | | | | |
|----------------------|------------------------|-------------------------|-------------------------------|
| • Thermal Management | • DFM | • Feasibility Studies | • Validation Planning |
| • Liquid Cooling | • Product Architecture | • Customer Requirements | • Cross Functional Leadership |
| • CFD | • HPC Systems | • Reliability Analysis | • Mission Critical Systems |
| • Fluid Dynamics | • Risk Assessment | • Thermal Architecture | |

PROFESSIONAL AFFILIATIONS

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

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST