Ben Wilfong

1 Basic Information

Title: Graduate Research Assistant

Institution: Georgia Institute of Technology

Email: bwilfong3@gatech.edu Website: benwilfong.com

Research Interests: Computational fluid dynamics, bubble dynamics, hydrodynamic instability, multiphase fluid dynamics, high performance computing, GPU accelerated modeling and simulation

2 Education

• Georgia Institute of Technology

(In Progress) Doctor of Philosophy, Computational Science and Engineering Advisor: Dr. Spencer Bryngelson

• Rose-Hulman Institute of Technology

(2022) Bachelor of Science, Mechanical Engineering and Computational Science

3 Experience

• Weapons and Complex Integration Intern

June 2022 – August 2022

Institution: Lawrence Livermore National Laboratory

Supervisor: Dr. Kyle Sinding

Duties: Perform molecular dynamics simulations using LLNL's HPC resources using

LAMMPS, generate case files and input data, post-process data to gather useful

quantities of interest

• EERE High Performance Computing for Manufacturing Intern July 2021 – August 2021

Institution: Lawrence Livermore National Laboratory in collaboration with Oak Ridge In-

stitute for Science and Education (ORISE)

Supervisor: Dr. John Karnes

Duties: Perform finite element simulation using LLNL's HPC resources using ALE3D,

generate case files and input data, post-process data to gather useful quantities

of interest

4 Awards

• (2022) Georgia Tech Presidents Fellowship

• (2024) CRNCH Fellowship for Novel Computing Paradigms and Hierarchies

5 Service and Outreach

• (2023-Present) PURA Award Reviewer

6 Publications

6.1 Archival, heavily referred papers

[P1] Anand Radhakrishnan, Henry Le Berre, Benjamin Wilfong, Jean-Sebastien Spratt, Mauro Rodriguez, Tim Colonius, and Spencer H. Bryngelson. "Method for scalable and performant GPU-accelerated simulation of multiphase compressible flow". In: Computer Physics Communications 302 (2024), p. 109238. DOI: 10.1016/j.cpc.2024.109238

6.2 Conference papers

- [C2] Benjamin Wilfong, Ryan M. McMullen, Timothy Koehler, and Spencer H. Bryngelson. "Instability of two-species interface via vibration". In: AIAA Aviation Forum and Exposition. Las Vegas, Nevada, 2024
- [C1] Benjamin Wilfong, Anand Radhakrishnan, and Spencer H. Bryngelson. "Multiphase flow numerics: Perspectives from exascale simulation". In: 5th International Conference on Numerical Methods for Multiphase Flow (ICNMMF). Reykjavik, Iceland, 2024