

Haocheng Yu

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Research Interests: Computational fluid dynamics, compressible flows, acoustics, turbulent flows, high performance computing, scientific computing, data-driven methods

Employment

- 2020 – Present ■ **Graduate Research Assistant** Daniel Guggenheim School of Aerospace Engineering, Georgia Institute of Technology
Advisor: Prof. Spencer Bryngelson & Prof. Krishan Ahuja
- 2018 – 2019 ■ **Undergraduate Research Assistant** Department of Mechanical and Aerospace Engineering, University of California, Irvine
Advisor: Prof. Dimitri Papamoschou
- 2016 ■ **Intern Engineer**, Geely Automobile Research & Development, Ningbo, China

Education

- 2021 – Present ■ **Ph.D., Georgia Institute of Technology** Computational Science and Engineering
Advisor: Prof. Spencer Bryngelson, Prof. Krishan Ahuja, Prof. Lakshmi Sankar
- 2019 – 2021 ■ **M.S., Georgia Institute of Technology** Aerospace Engineering
Advisor: Prof. Krishan Ahuja & Prof. Lakshmi Sankar
- 2015 – 2019 ■ **B.S. University of California, Irvine** Mechanical and Aerospace Engineering
Advisor: Prof. Dimitri Papamoschou

Research Publications




Articles/Preprints

- 1 B. Goldstein, D. N. Ramsey, H. Yu, S. H. Bryngelson, and K. K. Ahuja, “Performance of sharply bent acoustic resonators at high sound levels,” *AIAA Journal*, In-press, 2026.
- 2 B. Wilfong et al., “MFC 5.0: An exascale many-physics flow solver,” *Computer Physics Communications*, vol. 322, 2026.
- 3 H. Yu, K. K. Ahuja, L. N. Sankar, and S. H. Bryngelson, “Transmission of high-amplitude sound through leakages of ill-fitting earplugs,” *arXiv preprint arXiv:2510.16355*, 2025.
- 4 H. Yu, T. Chu, and S. H. Bryngelson, “Energy dissipation mechanisms in an acoustically-driven slit,” *arXiv preprint arXiv:2512.19507*, 2025.

Peer-reviewed Conference Proceedings

- 1 B. Goldstein, D. N. Ramsey, H. Yu, S. H. Bryngelson, and K. K. Ahuja, “Performance of sharply bent acoustic resonators at high sound levels,” in *AIAA AVIATION FORUM AND ASCEND*, 2025, p. 3748.
- 2 H. Yu, K. K. Ahuja, L. N. Sankar, and S. H. Bryngelson, “Numerical investigation of leakage of high-amplitude sound in ill-fitting earplugs,” in *AIAA AVIATION FORUM AND ASCEND*, 2024, p. 4391.
- 3 H. Yu, J. Filloon, D. N. Ramsey, K. K. Ahuja, and L. N. Sankar, “Modelling and testing sound leakage in ill-fitting earplugs,” in *AIAA SCITECH Forum*, 2022, p. 2562.

Awards

- 2020  **Small Bets Award**, \$ 100k research funding
Internal Research and Development Fellowship in Georgia Institute of Technology
- 2018  **The Runner-up of Ingenuity Senior Design**, \$ 10k award
University of California, Irvine.
- 2015-2019  **Dean's List**
University of California, Irvine.

References

- 2024-2025 **President's Undergraduate Research Awards**, Reviewer