

Postdoc in computational fluid-structure interaction at  
Vanderbilt University  
Vanderbilt University

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Posted Dec. 17, 2024, set to expire Apr. 18, 2025

**Job Title** Postdoc in computational fluid-structure interaction at  
Vanderbilt University

**Department** Mechanical Engineering  
<https://engineering.vanderbilt.edu/departments/mechanical-engineering/>

**Institution** Vanderbilt University  
Nashville, Tennessee

**Date Posted** Dec. 17, 2024

**Application Deadline** Open until filled

**Position Start Date** Available Immediately

**Job Categories** Post-Doc

**Academic Field(s)** Mechanical Engineering  
Engineering Physics  
Computer Engineering  
Aerospace/Aeronautical/Astronautics

**Job Website** <https://www.vanderbilt.edu/postdoc/prospective-postdocs/current-opportunities/>

**Apply By Email** [haoxiang.luo@vanderbilt.edu](mailto:haoxiang.luo@vanderbilt.edu)

**Job Description**

The Computational Flow Physics and Engineering (CFPE) lab under the supervision of Dr. Haoxiang Luo (<https://my.vanderbilt.edu/haoxiang/>) is seeking a post-doctoral scholar on computational modeling of fluid-structure interaction (FSI). The position is open for immediate hire. We are looking for a highly motivated candidate with expertise in developing high-fidelity and efficient numerical FSI solvers and parallel computing algorithms. This position is supported by a multi-year grant and involves a

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multidisciplinary team of researchers. To qualify for the position, the candidate should have:

- A recent Ph.D. in Mechanical Engineering or Aerospace Engineering or related fields
- Strong foundation in fluid mechanics and computational fluid dynamics (CFD)
- Strong experience in numerical methods, programming, and CFD code development
- Strong experience in parallel computing and code development, especially using MPI.

Additionally, the successful candidate should preferably

- Have sufficient knowledge of finite-element methods and solid mechanics
- Have experience in Immersed-boundary method and FSI modeling
- Have strong verbal and written communication skills
- Be creative and able to work as part of a multi-disciplinary group including graduate students, experimentalists in fluid mechanics, and researchers in medical science.

The initial appointment will be for one year, with the possibility of renewal based on satisfactory performance. The expectation is for the successful candidate to remain for a minimum of 2 years.

Institutional Information: Vanderbilt University is a private, internationally recognized research university located in Nashville, Tennessee, which has a metro population of 1.9 million people. The School of Engineering is located adjacent to the Vanderbilt University Medical Center, creating a rich environment for interdisciplinary and translational research.

### **EEO/AA Policy**

At Vanderbilt University, we are intentional about and assume accountability for fostering advancement and respect for equity, diversity, and inclusion for all students, faculty, and staff. Our commitment to diversity makes us who we are. We have created a community that celebrates differences and lets individuality thrive. As part of this commitment, we actively value diversity in our workplace and learning environments as we seek to take advantage of the rich backgrounds and abilities of everyone. The diverse voices of Vanderbilt represent an invaluable resource for the University in its efforts to fulfill its mission and strive to be an example of excellence in higher education.

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**Contact Information**

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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