

PhD Research Assistantship in Supersonic/Hypersonic
Aerodynamics at Stevens (Fully Funded)
Stevens Institute of Technology

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Posted Nov. 21, 2024, set to expire Mar. 23, 2025

Job Title	PhD Research Assistantship in Supersonic/Hypersonic Aerodynamics at Stevens (Fully Funded)
Department	Mechanical Engineering
Institution	Stevens Institute of Technology Hoboken, New Jersey
Date Posted	Nov. 21, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Optics & Optical Engineering Mechanical Engineering Engineering Physics Aerospace/Aeronautical/Astronautics

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Job Description

Fully Funded PhD Research Assistantship in Supersonic/Hypersonic Aerodynamics at Stevens Institute of Technology in the Parziale Group



Position Overview

The Department of Mechanical Engineering at Stevens Institute of Technology is seeking a highly motivated PhD student to join the Parziale Group to conduct cutting-edge research in high-speed

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boundary-layer physics. This fully funded position offers the opportunity to contribute to transformative advances in hypersonic flow diagnostics and modeling. The anticipated start date is Fall 2025.

Research Focus

The successful candidate will work on experimental investigations of supersonic and hypersonic boundary-layer physics problems including instability and transition, turbulence and shock-wave/boundary-layer interaction. Using advanced laser diagnostic techniques, such as krypton and acetone tagging velocimetry, focused laser differential interferometry, and near-resonant enhanced schlieren, the research will explore:

- Mechanisms driving instability growth in the boundary layer.
- High-fidelity turbulence characterization over complex geometries, including blunt cones and backward-facing steps.
- Validation of turbulence models at extreme flow conditions.

The candidate will utilize a state-of-the-art hypersonic wind tunnel called the Stevens Impulse Facility (SIF).

Eligibility Requirements

- Bachelor's or Master's degree in Mechanical Engineering, Aerospace Engineering, or a related field by the start date.
- Strong background in fluid mechanics and heat transfer; prior experience with experimental techniques is a plus.
- Programming skills (e.g., MATLAB, Python, or similar) are desirable.
- Excellent communication and analytical skills.

Why Join the Parziale Group? As part of our team, you will:

- Collaborate with experts from academia, government, and international organizations, including NATO technical teams.
- Present your work at prestigious conferences and publish in top-tier journals.
- Receive a competitive stipend, full tuition coverage, and travel support for research dissemination.

How to Apply

Interested candidates should send the following materials to Dr. Nick Parziale at nparzial@stevens.edu:

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- A one-page cover letter detailing your research interests and career goals.
- CV or resume, including relevant coursework and experience.
- Contact information for two academic or professional references.

Application Deadline

Review of applications will begin immediately and continue until the position is filled. Preference will be given to those who apply by December 31st.

Take this opportunity to push the boundaries of high-speed aerodynamics and make a lasting impact in the field of hypersonic flight. We look forward to your application!

EEO/AA Policy

Stevens Institute of Technology is an Equal Opportunity Employer. Accordingly, Stevens adheres to an employment policy that prohibits discriminatory practices or harassment against candidates or employees based on legally impermissible factor(s) including, but not necessarily limited to, race, color, religion, creed, sex, national origin, nationality, citizenship status, age, ancestry, marital or domestic partnership or civil union status, familial status, affectional or sexual orientation, gender identity or expression, atypical cellular or blood trait, genetic information, pregnancy or pregnancy-related medical conditions, disability, or any protected military or veteran status.

Stevens is building a diverse faculty, staff, and student body and strongly encourages applications from people of all backgrounds. Stevens is a federal contractor under the Vietnam Era Veterans' Readjustment Assistance Act (VEVRAA) and the Rehabilitation Act of 1973, as well as other federal statutes.

Contact Information

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

Contact Professor Nick Parziale

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