

JINYUAN LIU

EBU II, Department of MAE, UCSD,
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EDUCATION

- Ph. D. Student and Research Assistant in Fluid Mechanics** Jan. 2021 – present
Department of Mechanical and Aerospace Engineering, UC San Diego
Topic: Stratified rotating wakes past an isolated three-dimensional hill
Advisor: Sutanu Sarkar
- B. S. E., Engineering Thermo-physics (with distinction)** Aug. 2016 – June 2020
Department of Engineering Mechanics, Tsinghua University
GPA: 3.74/4.00; Rank: 4/47 in program, and 1/11 in major.
Dissertation Title: Large- and very-large-scale structures in turbulent channels
- Research Assistant** Sep. 2019 – Mar. 2020
School of Aeronautics, Universidad Politécnica de Madrid
Topic: Large- and very-large-scale structures in turbulent channels
Advisor: Javier Jiménez

AWARDS

- | | |
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| Academic Distinction Award for Graduates, Tsinghua University (10 %) | 2020 |
| Outstanding Undergraduate Dissertation, Tsinghua University (5 %) | 2020 |
| Second Prize for Student Research Training, Tsinghua University | 2019 |
| Scholarship for Scientific Innovation, Tsinghua University | 2018 |
| Scholarship for Overall Excellence, Tsinghua University | 2018 |
| Scholarship for Academic Distinction, Tsinghua University | 2017,2018,2019 |
| First Prize, National Aerospace Knowledge Competition for College Students | 2018 |

FELLOWSHIPS AND MEMBERSHIPS

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| Fellowship, the 5th Madrid Turbulence Summer School, Universidad Politecnica de Madrid | 2023 |
| Fellowship, the Spark Innovative Talent Cultivation Program , Tsinghua University | 2018 |
| Student Membership, American Physical Society, Division of Fluid Dynamics | since 2019 |

RESEARCH EXPERIENCE

- Graduate research assistant** Jan. 2021 – present
Mechanical and Aerospace Engineering, UC San Diego
Advisor: Sutanu Sarkar
- Post-baccalaureate research assistant** July 2020 – Dec. 2020
Department of Engineering Mechanics, Tsinghua University
Advisor: Wei-Xi Huang
- Research assistant** Sep. 2019 – Mar. 2020
School of Aeronautics, Universidad Politécnica de Madrid
Advisor: Javier Jiménez

Visiting Research Student

Mechanical and Mechatronics Engineering, University of Waterloo
Advisors: Jean-Pierre Hickey, Xiaohua Wu

July 2019 – Aug. 2019

PUBLICATIONS AND TALKS

Publications

1. Chunmei Xie, Jinyuan Liu, Jing-Wei Jiang, and Wei-Xi Huang. Numerical study on wetted and cavitating tip-vortical flows around an elliptical hydrofoil: Interplay of cavitation, vortices, and turbulence. *Physics of Fluids*, 33(9):093316, 2021

Thesis

1. Jinyuan Liu. *Large- and very-large-scale structures in turbule.* Bachelor's thesis, Tsinghua University, 2020

Talks

1. Jinyuan Liu, Pranav Puthan, and Sutanu Sarkar. Structures of vortices in underwater hill wakes. *15th Southern California Flow Physics Symposium (SoCal Fluids XV)*, 2022
2. Jinyuan Liu, Pranav Puthan, and Sutanu Sarkar. Spatiotemporal analysis of coherent structures in the wake of an underwater hill. *Bulletin of the American Physical Society*, 2022
3. Jinyuan Liu, Pranav Puthan, and Sutanu Sarkar. Influence of rotation on the vortex dynamics in stratified flow past an underwater hill. *16th Southern California Flow Physics Symposium (SoCal Fluids XVI)*, 2023
4. Jinyuan Liu, Pranav Puthan, and Sutanu Sarkar. Coherent vortex structures in stratified rotating ow past a three-dimensional hill. *Bulletin of the American Physical Society*, 2023

TEACHING ACTIVITIES

Teaching assistant

MAE290B Numerical Methods for ODE & PDE Simulations, UC San Diego
Instructor: Sutanu Sarkar

Winter 2022,2023,2024

Teaching assistant

MAE214A Introduction to Turbulence and Turbulent Mixing, UC San Diego
Instructor: Sutanu Sarkar

Spring 2022,2023

MENTORING EXPERIENCE

Chenyao Luo (Master of Science in Fluid Mechanics)

Topic: Simulation and modal analysis of two-dimensional wakes

2022 – 2023

SERVICES

Referee for: Physics of Fluids, Acta Mechanica Sinica

Council chair, the 12th [Spark Innovative Talent Cultivation Program](#), Tsinghua University

Peer Mentor of 15 freshmen, School of Aerospace, Tsinghua University 2018,2019

JUMP Mentor of 8 freshmen, Jacob School of Engineering, UC San Diego 2020,2021

TECHNICAL SKILLS

Programming Languages	FORTRAN, C++, MATLAB, Python, L ^A T _E X, Bash(Unix Shell)
Software Capability	Paraview, Tecplot, OriginPro, OpenFOAM, Mathematica
CAE Usage	AutoCAD, SOLIDWORKS, ANSYS ICEM, ANSYS Fluent

EXTRA-CIRRICULAR

Former member, the baseball team and the water polo team, Tsinghua University

Former member, the swimming team, School of Aerospace, Tsinghua University

Go (Wei-Qi) player ranked amateur 5-dan, Chinese Go Association 2013

Honorary citizen, Tulsa, OK 2014

Aviation Photographer

- Published on the largest peer-reviewed database Jetphotos (www.jetphotos.com).

Profile: <https://www.jetphotos.com/photographer/144411>

- Selected member of the photography team of Airways Magazine (<https://airwaysmag.com>)

Updated: September 15, 2023