Rundong Zhou

Curriculum Vitae

Contact Information
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Research Interests

Fluid mechanics, Computational physics, Dynamical systems, Numerical and harmonic analysis, Spectral methods, Physical oceanography, and Atmospheric Sciences

EDUCATION

Candidate for **Master of Science** expected June 2024
Major in Complex Adaptive Systems cGPA 5/5
Chalmers University of Technology Gothenburg, Sweden

Erasmus+ Exchange Program August 2023 - June 2024
Placement in the Physics of Fluids group Enschede, Netherlands
University of Twente
Master's thesis supervisor: Dr. Chris Howland and Prof. Detlef Lohse

Bachelor of Applied Science in Engineering Science June 2021
Major in Engineering Physics cGPA 3.28/4
University of Toronto Toronto, Canada
Bachelor's thesis supervisor: Prof. Nicolas Grisouard

Summer School in Mathematical Fluid Mechanics June 2023
Université Grenoble Alpes, Institut Fourier Grenoble, France

LIST OF PUBLICATION

Zhou, R. and Grisouard, N. *Spectral solver for Cauchy problems in polar coordinates using discrete Hankel transforms.* arXiv preprint. Submission pending. arXiv:2210.09736

HONOURS AND AWARDS

Avancez Scholarship 2022 - 2024
Chalmers University of Technology
- 75% tuition fee reduction, increased to 85% reduction in the second year for excellency.

Erasmus+ Exchange Travel Grant 2023 - 2024
Chalmers University of Technology, and University of Twente

Undergraduate Research Fellowship 2018
Canadian Institute for Theoretical Astrophysics
- C$ 2000 per month for four months.

Dean's Honor List 2015 Fall, 2016 Fall
University of Toronto 2020 Fall, 2021 Winter
- Pass with honor, >80% average.

RESEARCH EXPERIENCE

Master's Thesis August 2023 - June 2024
Department of Applied Physics, University of Twente Enschede, Netherlands
Supervisor: Dr. Chris Howland and Prof. Detlef Lohse

Bachelor's Thesis September 2020 - April 2021
Department of Physics, University of Toronto Toronto, Canada
Supervisor: Prof. Nicolas Grisouard
- Developing a novel spectral method for solving the Gross-Pitaevskii equation for Bose-Einstein condensates in polar coordinates. Experience with computational physics.

Research Assistant[1] April 2021 - October 2022
Department of Physics, University of Toronto
Supervisor: Prof. Nicolas Grisouard

- Applying the novel Fourier-Bessel based spectral method using the discrete Hankel transform to more general problems. Error analysis and validation of the method. Experience with numerical analysis and spectral theorems.

Summer Undergraduate Research Program May - September 2018
Canadian Institute for Theoretical Astrophysics Toronto, Canada
Supervisor: Prof. Norm Murray

- Experience with data analysis on Galactic Legacy Infrared Midplane Survey Extraordinaire (GLIMPSE) database.

Research Assistant January - April 2022
Department of Mechanical Engineering, University of Ottawa
Supervisor: Prof. Natalie Baddour

- Developing a new type of 2-D discrete Fourier transform in polar coordinates using Dini series. Validating the discrete orthogonality relation with Hankel-Scaffidi integral. Experiences with complex analysis.

PROFESSIONAL EXPERIENCE

Intern Technical Interpreter October - December 2019
Baoshan Iron & Steel Co., Ltd., and PMC-Colinet Industries Shanghai, China
Supervisor: Marcello Mameli

- English and Mandarin. RPP07-3 CNC pipe finishing machine bearing replacement and refurbishment project at Baoshan Iron & Steel Co., Ltd..

Featured Courses
Toronto: Continuum Mechanics, Computational Physics, Nonlinear Physics, Statistical Mechanics, Groups and Symmetry
Chalmers: Dynamical Systems, Non-equilibrium Processes in Physics Chemistry and Biology, Quantum Field Theory, Artificial Neural Networks
Twente: Advanced Fluid Mechanics, Turbulence, Granular Matter, Advanced Colloids and Interfaces

Programming Skills
Python, Matlab, LaTeX, Mathematica: Advanced
C, Dedalus Libraries: Intermediate

Latest Update: April 7, 2023

[1] As the continuation of the bachelor's thesis.