

EDUCATION

Courant Institute of Mathematical Sciences, New York University Ph.D. in Mathematics, the Henry M. MacCracken Fellowship – Advisor: Prof. Charles S. Peskin	New York, NY 09/18–05/23(Expected)
Peking University B.S. in Mathematics, with Honors B.S. in Physics (double major)	Beijing, CN 09/14–06/18

EXPERIENCE

Courant Institute of Mathematical Sciences, NYU Research Assistant, supervised by Prof. Charles S. Peskin – Proposed a new Fourier Spectral Immersed Boundary method for fluid-structure interaction in incompressible viscous Navier-Stokes flow – Proved the volume conservation, momentum conservation, energy conservation, and translation invariance of the new method, verified these properties numerically, and studied its convergence speed and boundary resolution – Simulated various numerical experiments for the Stokes equations and the Navier-Stokes equations in two and three dimensions with efficient algorithmic implementation in Matlab and Python	New York, NY 06/21–09/21
Materials Research Science and Engineering Center (MRSEC), NYU Research Assistant, supervised by Prof. Aleksandar Donev – Simulated massive number of colloidal particles on an inclined plane and quantitatively measured the shock wave by the nonlinear Burger’s equation – Implemented a fast numerical solver of the particle system in Matlab and Python	New York, NY 01/20–08/20
School of Mathematical Sciences, Peking University Undergraduate Researcher, supervised by Prof. Pingwen Zhang – Simulated the chemical and physical process of the forming, transforming, and diffusion of haze with the weather research and forecasting model: WRF – Post-processed the data gained from WRF, mainly using statistic regression methods and machine learning, to predict the future weather and the concentration of pollution gas such as PM2.5 and PM10 (Haze)	Beijing, CN 02/16–02/18

PUBLICATIONS

- [1] **Z. Chen** and C. Peskin, “A fourier spectral immersed boundary method with exact translation invariance, improved boundary resolution, and a divergence-free velocity field”, *Manuscript submitted to Physical Review Fluids*,
- [2] B. Sprinkle, S. Wilken, S. Karapetyan, M. Tanaka, **Z. Chen**, J. R. Cruise, B. Delmotte, M. M. Driscoll, P. Chaikin, and A. Donev, “Sedimentation of a colloidal monolayer down an inclined plane”, *Physical Review Fluids*, vol. 6, no. 3, p. 034202, Mar. 11, 2021.

TEACHING

- **Instructor** at New York University Summer 2022
Calculus I (MATH-UA 121)
- **Recitation Instructor** at New York University Spring 2022
Mathematics For Economics III (MATH-UA 213)
- **Teaching Assistant/Grader** at New York University Fall 2021
Complex Variables (One-Term) (MATH-GA 2451)
- **Teaching Assistant/Grader** at New York University Fall 2020
Complex Variables I (MATH-GA 2450)
- **Teaching Assistant/Grader** at New York University Fall 2019
Complex Variables I (MATH-GA 2450)

SCHOLARSHIPS AND AWARDS

- Thomas Tyler Bringley Fellowship Prize 09/22
- Henry M. MacCracken Fellowship 09/18–05/23
- Top Talent in Applied Mathematics Fellowship 09/17–06/18
- Excellent Student Leader, Peking University (3/715) 11/16
- Samsung Scholarship, Peking University (Top 5%) 11/16
- Meritorious Winner in Mathematical Contest in Modeling 05/16
- First Prize in National College Students Mathematics Competition (rank 4th of all) 12/15
- First Prize in National College Student Physics Competition, 12/15
- Pacemaker to Merit Student, Peking University (10/715) 11/15
- Kwang-Hua Scholarship, Peking University (Top 5%) 11/15
- First Prize in National High School Physics Competition (rank 13th in Sichuan Province) 09/13