Zihan Chen

85 Waterman Street, Providence, RI 02912 | (401) 225-0756 | zihan_chen@brown.edu

EDUCATION

Brown University, Providence, RI Sept 2016 - May 2020

Sc.B. Geophysics with Honors and A.B. Computer Science, GPA 3.9/4.0
Relevant Coursework: *Applied PDEs*, *Fluid Mechanics, Statistical Inferences, Computer System Programing*
Thesis: An objective climatology of Arctic polar lows based on ERA5 reanalysis (Prof. Amanda Lynch)

RESEARCH EXPERIENCE

Brown University, Providence, RI June 2020 – Present

Research Assistant | Institute at Brown for Environment and Society | Advisor: Prof. Amanda Lynch

- Quantify historic trends in urban water supplies for Gauteng City-Region, South Africa by analyzing rainfall and streamflow data from climate reanalysis products (ERA5-GloFAS) and field measurements (rain gauges & radar)
- Build statistical models to predict streamflow in Vaal River basin to assist water policy planning
- Develop, deploy, and maintain a web survey software for public policy research in South Africa
- Analyze meteorological risks of polar lows on maritime shipping in the European Arctic

Carnegie Institution for Science, Stanford, CA Summer 2018

Research Intern | Department of Global Ecology | Advisors: Prof. Geeta Persad and Prof. Kenneth Caldeira

- Quantify impacts of black carbon aerosols emitted from major world economies on Arctic climate
- Investigate long-range transportation pathways of black carbon from different origins into polar regions
- Develop Python scripts to process, analyze, and visualize climate model outputs from NCAR CAM5

Brown University, Providence, RI Summer 2017

Research Assistant | Dept. Earth, Environmental, and Planetary Sciences | Advisor: Prof. Sylvia Dee

- Analyzed the responses of Lake Tanganyika in S.E. Africa to climate changes during the last glacial maximum by applying a one-dimensional energy budget model to simulate water column mixing
- Adjusted and evaluated model parameterization using GCM outputs and field observations
- Compiled Fortran scripts on HPC clusters and developed Shell scripts to run parallel simulations

PUBLICATIONS

Dee, S. G., Russell, J. M., Morrill, C., **Chen, Z.**, & Neary, A. (2018). PRYSM v2.0: A proxy system model for lacustrine archives. Paleoceanography and Paleoclimatology, 33(11), 1250–1269. https://doi.org/10.1029/2018PA003413

PRESENTATIONS

Chen, Z & Persad, G. (2018). *Investigating long-range transport of Black Carbon into the Arctic: an equal-emission experiment with the Community Atmosphere Model Version 5 (CAM5)*. American Geophysical Union Fall Meeting

Chen, Z., Dee, S. G., & Russell, J. M. (2017). *Modeling large tropical lake system responses to climate change since the Last Glacier Maximum*. Brown University Summer Research Symposium

HONORS AND AWARDS

Sigma Xi, Brown University May 2020
Departmental Honors (Dept. Earth, Environmental, and Planetary Sciences), Brown University May 2020
AGU Outstanding Student Presentation Award, Atmospheric Sciences January 2019
Karen T. Romer Undergraduate Teaching and Research Award Summer 2017

TEACHING EXPERIENCE

GEOL 0250 Modelling and Quantitative Analysis in Natural Sciences (Prof. Christian Huber) Fall 2018

Teaching Assistant | Dept. Earth, Environmental, and Planetary Sciences, Brown University

- Developed lab modules on MATLAB and hosted office hours to review assignments and exams

CSCI 0160 Intro to Algorithms and Data Structures (Prof. Seny Kamar) Spring 2018
Teaching Assistant | Dept. Computer Science, Brown University

- Hosted debugging clinics, led group discussion sessions, graded coding projects in Java and Python

PROFESSIONAL EXPERIENCE

Brown University Facilities Management, Providence, RI Summer 2019
Data Analyst | Office of Sustainability

- Developed institutional guidelines for green building development at Brown University by evaluating the costs and benefits of various certification programs (e.g., LEED and Living Building Challenge)
- Audited campus nitrogen footprints from food waste, utility consumptions, and fertilizer usage

LEADERSHIP AND OUTREACH

Strait Talk Summer 2019
Chair of Delegation | Brown University

- Co-organized conflict resolution workshops for students and young professionals from mainland China, Taiwan, and the U.S. to collaborate on mitigation of political tension concerning the Taiwan strait

Brown Outdoor Leadership Training Program Summer 2019
Student Mentor | Brown University

- Received over 200 hours of training in group facilitation and backcountry medicine
- Co-led a five-day backpacking trip to the White Mountains, NH in August 2019 for rising sophomore and transfer students, and offered individual mentorship in the following semester

TECHNICAL SKILLS AND LANGUAGES

- Programing languages with working proficiency: Python, MATLAB, Java, and Shell scripting
- Software: Jupyter Notebook (Proficient), Git (Proficient), SLURM (Intermediate), and LaTeX (Intermediate)
- Languages: Mandarin Chinese (Native Speaker), English (Proficient), and Japanese (Intermediate)