# Lijie Ding

Ph.D Candidate (401)-410-4049 Lijie_Ding@Brown.edu CV

## Education

Ph.D. in Physics, Brown University 2017-2022 (expected)
Research interests: Soft Matter, Computational Physics
Advisor: Robert A. Pelcovits and Thomas R. Powers

B.Sc. in Applied Physics, University of Science and Technology of China 2013-2017
Thesis: Irreversible Monte Carlo Algorithms
Advisor: Youjin Deng

## Experience

**Monte Carlo simulation of chiral fluid membrane** 2018-present
*Research Assistant, Brown University*

- Designed **quantitative models** and implemented Monte Carlo simulation for **complex systems** using **C++**.
- Worked with computing cluster using **Slurm** workload manager in commend-line interface.
- Analyze and visualized data using **Python**, present results to people with different backgrounds.

**Controlled DNA Brownian motion using electrokinetic noise** 2017-2018
*Teaching Assistant, Brown University*

- Proposed and tested the **stochastic process** modeling hypothesis for the system studied.
- Designed and implemented **image processing** program for DNA molecule tracking, and analyzed **time-series** data using **Python** and **OpenCV**.
- Carried out experiment in **collaboration** with others.

**Irreversible Monte Carlo algorithms** 2015-2017
*Undergraduate Research Assistant, University of Science and Technology of China*

- Designed state-of-the-art Monte Carlo **algorithm** and implemented it using **C++**.
- Carried out **efficiency benchmarking**, and analyzed data using **Python**, up to 14,100% improvement were achieved.

## Skills

**Programming**: C++, Python, Mathematica, Matlab, Shell, Latex, HTML/CSS.
**Software**: Numpy, Scipy, OpenCV, Matplotlib, Blender, Git.
**Technical**: Complex systems modeling, Statistical algorithms development, Data analysis and visualization.
**Communication**: Public speaking, Lecturing.

## Publications

See corresponding section in CV