

# Chenguang Guan

Mobile: (+44) 7778936444, Email: [cg801@cam.ac.uk](mailto:cg801@cam.ac.uk), [physicsguan@smail.nju.edu.cn](mailto:physicsguan@smail.nju.edu.cn)

## EDUCATION

<b>Nanjing University</b> , Nanjing, China	2016 - 2020
B.Sc. in Physics (Honor/Elite Program), <i>GPA</i> : 89.4/100	
<b>Massachusetts Institute of Technology</b> , Cambridge, MA, USA	2019 - 2019
Undergraduate Special Student Program (19 Spring term)	
<b>University of Cambridge</b> , Cambridge, UK	2022 - 2023
MASt in Applied Mathematics (Part III of Mathematical Tripos, St John's College)	
<i>Specializations</i> : Theoretical Physics, Mathematical Statistics	
<i>Part III Seminar Talk</i> : Functional Renormalization Group (2 December 2022)	
<b>Brown University</b> , Providence, RI, USA	2023 - 2028
PhD in Physics (deferred entry)	

## EMPLOYMENT

<b>Shanghai Qi Zhi Institute</b> , Shanghai, China	Oct. 2020-Sept. 2022
Researcher ("Senior" Research Assistant)	
<i>Principal Investigator</i> : Prof. Xiaopeng Li, Department of Physics, Fudan University	
<i>Topics</i> : Quantum Machine Learning; Theoretical Atomic, Molecular, and Optical Physics;	
➤ Dynamics of Bose-Einstein Re-condensation with Spontaneous Symmetry Breaking	

## INTERNSHIP

<b>University of California, San Diego</b> , La Jolla, CA, USA	Sept. 2019-May. 2020
Visiting Research Assistant	
<i>Advisor</i> : Prof. Yi-Zhuang You, Department of Physics, University of California, San Diego	
<i>Topics</i> : Artificial Intelligence for Science; Theoretical Condensed Matter Physics;	
➤ Atom Representation Learning (atom-to-vector)	
➤ Self-learning Monte Carlo based on Flow Model and Neural Renormalization Group	
<b>Nanjing University</b> , Nanjing, Jiangsu, China	
Undergraduate Research Assistant	
<i>Advisor</i> : Prof. Yuan Zhou, School of Physics, Nanjing University	
<i>Topics</i> : Theoretical Condensed Matter Physics	
➤ Quasi-crystalline Chern Insulator and Incommensurate Moiré Structure	
➤ Non-equilibrium Electron-phonon System Calculation with Non-Gaussian Variational Ansatz	

## ONGOING PROJECT

<b>Renormalization Group for Pruning Neural Network</b> (Dec. 2022 – Present, remotely)
Advisor: Prof. Andrey Gromov, Department of Physics, University of Maryland, College Park

## PROJECT EXPERIENCE (Inter-disciplinary)

National Innovation and Entrepreneurship Training Program ( <b>Funding</b> : 8000-10000 CNY):
<b>Exploration on The Physical Properties of Hexagonal YFeO<sub>3</sub></b> (Experimental Physics)
Advisor: Prof. Zhao-Sheng Li, College of Engineering and Applied Sciences, Nanjing

University

**Rosensweig-instability of Ferro-fluid** (Statistical Mechanics; Computational Fluid Dynamics)

Advisor: Prof. Hui-Jun Zhou, Fundamental Physics Laboratory, Nanjing University

**Large-Scale Chaos System Prediction Based on Reservoir Computation** (Machine Learning; Statistical Mechanics; Dynamical System)

Advisor: Prof. Jun Wang, School of Physics, Nanjing University

## **PUBLICATIONS**

---

L.S. Lu, F. Zhang, Y. Li, A. Yang, **Chenguang Guan**, X. Ding, Y. Liu, Y. Liu, C. Zhang, L. Li, Q. Zhang “Dendritic Targeted mRNA expression via a cis-acting RNA UTR element”, BBRC-18-11065.

## **SKILLS (Relevant)**

---

**Programming Languages:** Python, C++, FORTRAN, Julia;

**Tools and Techniques:** LATEX, Git, TensorFlow, PyTorch;

**Mathematical Software:** MATLAB, Mathematica, COMSOL, Freefem++;

## **AWARDS AND HONORS**

---

- 2017 & 2018 & 2019, First Class of Elite Program Scholarship (twice) & Second Class of Elite Program Scholarship (once) (Awarded to the top students in the elite program (honor program) with academic excellence)
- 2017 & 2018 & 2019, the People’s Scholarship in China (three times, Normal Awards & Special Awards)
- 2018, Xie-Xin Scholarship (14 students for the whole Nanjing University; Special Honor for Undergraduate Research)
- 2018, Zheng-Gang Science and Technology Elite Scholarship (20 students for the whole Nanjing University; Sponsoring Undergraduate Summer Research)
- 2018, International Genetically Engineered Machine competition (iGEM): Bronze Prize
- 2018, Mathematical Contest in Modeling (MCM): Meritorious Winner (1%-10% globally)
- 2017, China Undergraduate Physics Tournament (CUPT): First Prize (top 5 out of 100+ universities)
- 2017, Outstanding Student
- 2017, Excellent Volunteer