

## Education

### LPTMS, CNRS, Université Paris-Saclay

Île-de-France, France

PH.D CANDIDATE IN MATHEMATICAL PHYSICS

Oct. 2020 - present

- Thesis on the exclusion statistics and lattice random walks.
- The main fields of interest are combinatorial issues pertaining to the algebraic area of 2D lattice random walks and their continuous Brownian limit, and various implications for the associated quantum models, especially in the field of exclusion statistics, where particles exhibit stronger exclusion than Pauli. It may be generalized to other types of counting, or to higher-dimensional objects (strings, etc.).

### École Centrale de Pékin (ECPkn), Beihang University

Beijing, P.R. China

M.Sc. IN MATERIALS SCIENCE AND ENGINEERING, GPA: 3.95/4, RANKED TOP 5%

Aug. 2016 - Jul. 2018

- Thesis on the theory of dielectric electrorheological fluids.
- Performed theoretical calculation and numerical simulation by Python and COMSOL.
- Coursework: Modern Instrumental Analysis, Sensor Technology, Particle Physics, Nuclear Reactor, Advanced Fluid Dynamics, etc.

### École Centrale Paris (ECP, and now CentraleSupélec, Université Paris-Saclay)

Île-de-France, France

M.Sc. IN ENGINEERING, GPA: 3.84/4.33, RANKED TOP 35% AND 10% IN TWO ACADEMIC YEARS RESPECTIVELY

Aug. 2014 - Jul. 2016

- Undergone a rigorous training on a wide range of disciplines.
- Coursework: Probability Theory, Quantum and Statistical Physics, Advanced Materials, Heat Transfer, Finite Element Method, Atomic and Molecular Physics, Solid Physics, Theory of Relativity, etc.

### École Centrale de Pékin (ECPkn), Beihang University

Beijing, P.R. China

B. SC. IN MATHEMATICS, GPA: 3.64/4, RANKED 2/121

Aug. 2011 - Jul. 2014

- Intensive training in mathematics and physics.
- Coursework: Theoretical Mathematics, Mathematical Modeling, Analytical Mechanics, Wave Optics, Thermology, Electronics, Electromagnetism, Laboratory Methods, Computer Graphics, etc.

## Experience

### PaperClip, Dehydration Factory

Beijing, P.R. China

AUTHOR

Oct. 2019 - Sept. 2020 · 1 yr

- Author serving for *PaperClip*, a Chinese popular science channel on [YouTube](#), [bilibili](#), and [Sina weibo](#). I participated in the creation of the following videos:
  1. [Things you should know about COVID-19](#) (English subtitles available)
  2. [How to ATC for 1.4 billion people?](#) (English subtitles available)
  3. [Secret in the QR code](#)
  4. [How to engrave chips at the nanoscale?](#)
  5. [How to dive 10,000 meters under the sea?](#)
  6. [How to efficiently screen COVID-19 by nucleic acid testing?](#)
  7. [What actually happens in an ICU?](#) (English subtitles available)
  8. [What is in a CD?](#)
  9. [How to make a light but warm thermal underwear?](#)
  10. [Hello there! Check the water meter!](#)
  11. [How to kick an amazing curve ball?](#)
  12. [Do you really need a 120 Hz refresh rate screen?](#)
  13. [What is in a Resident Identity Card?](#)

### Global Science, simplified Chinese edition of *Scientific American*

Beijing, P.R. China

TRAINEE EDITOR

Oct. 2018 - Dec. 2018 · 3 mos

- Search and scout scientific topics and highlights for the general public in mathematics, physics, materials science, biology, information, psychology, etc.
- Translate, edit and proofread scientific articles for the official account on [WeChat](#), [Weibo](#) and [Chinese website](#).
- Record Chinese and English subtitles for science lectures and academic reports.
- Participate in the discussion of paper publications.

## Eduease.com

TUTOR

Beijing, P.R. China

Aug. 2016 - Dec. 2019 · 3 yrs 5 mos

- Teach mathematics and physics to junior high school students and elementary French to adults.

## Translation Center, Beijing Longquan Monastery

VOLUNTEER

Beijing, P.R. China

Aug. 2016 - Feb. 2018 · 1 yr 10 mos

- Volunteer in the French translation group of Longquan Monastery Translation Center.
- Undertake volunteer activities including extraction of terminology on the Weibo microblog platform, entry and proofreading of microblog articles and some scriptures, etc.

## Airbus Group Innovations

ENGINEERING INTERNSHIP WHICH AIMS TO DEVELOP A SUSTAINABLE SCOUTING ON R&T AND INNOVATION

Beijing, P.R. China

May 2017 - Jan. 2018 · 9 mos

DEVELOPMENT IN CHINA

- Write monthly newsletter of new technology in Mainland China, Hong Kong, Macao, and Taiwan.
- Write technical research reports of specific innovative technologies and companies.
- Write financial reports of specific companies in China.
- Consolidate and summarize technology research reports from Airbus Group Innovations worldwide.

## Laboratory MSSMat, École Centrale Paris

PROJECT INNOVATION

Île-de-France, France

Sept. 2015 - Jun. 2016 · 10 mos

- Collaborated with 2 colleagues at ECP to fabricate and characterize conductive nano-carbon material paint. The carbon-based material was prepared successfully, with theories proposed to explain the intriguing properties.

## École Centrale Paris

TEACHING ASSISTANT OF CHINESE CLASS

Île-de-France, France

Nov. 2014 - Jun. 2016 · 8 mos

- Volunteering work in Chinese class twice a week. Assisted international students in their oral and writing skills. Collaborated with language teacher in proposing new lesson plans.

## Herakles (Safran) & École Centrale Paris

PROJECT INNOVATION

Île-de-France, France

Oct. 2014 - Jun. 2015 · 9 mos

- Part of a 5-member team that worked on peeling test to propose an empirical formula describing the energy release rate of crack propagation. Deeply impressed by the work, the client used the current results as an exemplary model for subsequent batches.

## Laboratory of Materials, École Centrale de Pékin

STUDENT RESEARCH TRAINING PROGRAM OF NANOMATERIALS

Beijing, P.R. China

Oct. 2013 - Jun. 2014 · 9 mos

- Theoretical research and experimental preparation for a new thermal conductive thermal paste nanomaterial for CPU.

## Beijing Moreku Digital Technology Co., Ltd.

ANDROID-LIKE APPLICATION PROGRAMMER

Beijing, P.R. China

Mar. 2012 - Nov. 2013 · 1 yr 9 mos

- Develop Android-like application of periodic table of elements, Chinese traditional medicine product promotion, etc.
- Ranked top 10 and 15 (in no particular order) in 2012 and 2013 respectively, beating over 200 group and individual entries, in the annual national competitions of Android-like programming held by *Beijing Youth Daily*.

# Honors & Awards

## NATIONAL

2012 **National Scholarship**, Ministry of Education of P.R. China [\[Announcement\]](#)

Beijing, P.R. China

## DOMESTIC

2018 **Excellent Graduates**, Beihang University [\[Announcement\]](#)

Beijing, P.R. China

2018 **First Prize Scholarship**, Beihang University

Beijing, P.R. China

2017 **Charity Graduates: Graduate President Scholarship**, Beihang University [\[Announcement\]](#)

Beijing, P.R. China

2017 **First Prize Scholarship**, Beihang University

Beijing, P.R. China

2016 **First Prize Scholarship**, Beihang University

Beijing, P.R. China

2013 **Second Prize Scholarship**, Beihang University

Beijing, P.R. China

# Language

## Skills

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- Programming languages  
Python, C, MATLAB, and Wolfram.
- Productivity tools  
Microsoft Office (Word, Excel, PowerPoint, Publisher, Visio), and  $\text{\LaTeX}$ .
- Media design  
Photoshop, Lightroom, Vegas, and Aegisub.

## Hobbies

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- Leisure sports  
Jogging, Badminton, Swimming, and Tai chi chuan.
- Travelling  
Footprint (19 countries): Austria, Belgium, China, Czech Republic, France, Germany, Greece, Hungary, Iceland, Italy, Liechtenstein, Monaco, Norway, Portugal, Spain, Switzerland, United Kingdom, Vatican, and Vietnam.
- Photography
- Sudoku

## Presentation

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- Lecture in Chinese (6 hours), “Introduction of aeronautics and astronautics”, Beijing Bayi High School, P.R. China, Aug. 8, 2018.
- Presentation in French, “Simulation of interaction force between particles in electrorheological fluids”, headquarters of International Organisation of the Francophonie, during the [week of young French speaking scientific talents \(2nd edition\)](#) in Paris, France, Dec. 1-7, 2018.
- Presentation in English, “Random walks on two-dimensional lattice”, Oxy-Jeunes, [École de Physique des Houches](#), France, May 30-Jun. 2, 2021.

## Conference Proceeding Paper

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- H. Tang, **L. Gan**, and W. An, “[Electrostatic force between two dielectric particles in electrorheological fluids: beyond spherical particles](#)”, 4th International Conference on Chemical Materials and Process, Bangkok, Thailand, May 23-25, 2018.[\[CrossRef\]](#) [\[Google Scholar\]](#)