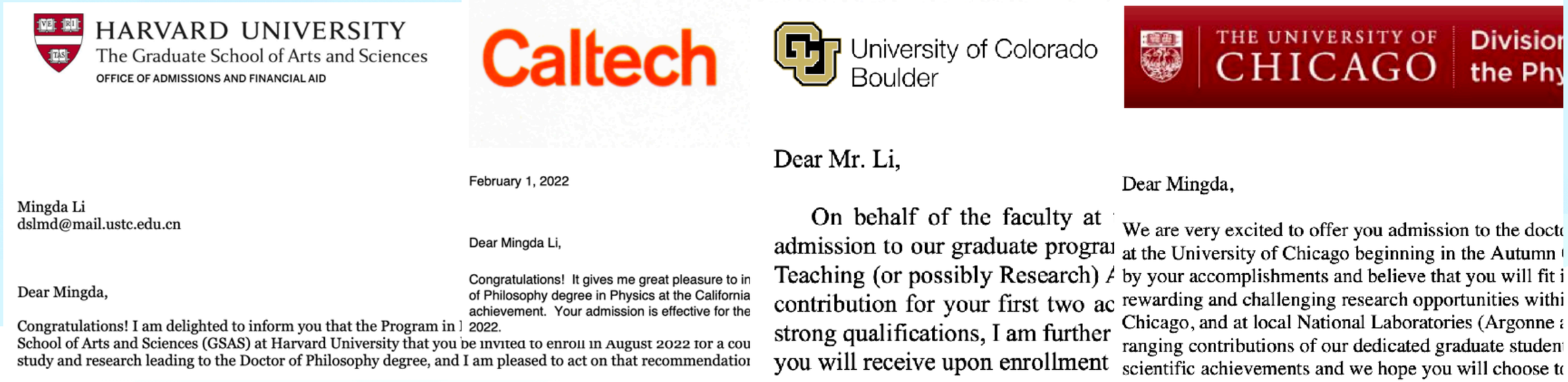
出国留学经验分享

如何选导师?

李明达 2023/01/30

我的申请情况



HARVARD UNIVERSITY
The Graduate School of Arts and Sciences
OFFICE OF ADMISSIONS AND FINANCIAL AID

Mingda Li
dslmd@mail.ustc.edu.cn

Dear Mingda,

Congratulations! I am delighted to inform you that the Program in
School of Arts and Sciences (GSAS) at Harvard University that you be invited to enroll in August 2022 for a cou
study and research leading to the Doctor of Philosophy degree, and I am pleased to act on that recommendatio

Caltech

February 1, 2022

Dear Mingda Li,

Congratulations! It gives me great pleasure to in
of Philosophy degree in Physics at the California
achievement. Your admission is effective for the
2022.

University of Colorado Boulder

Dear Mr. Li,

On behalf of the faculty at
admission to our graduate prograı
Teaching (or possibly Research) A
contribution for your first two ac
strong qualifications, I am further
you will receive upon enrollment

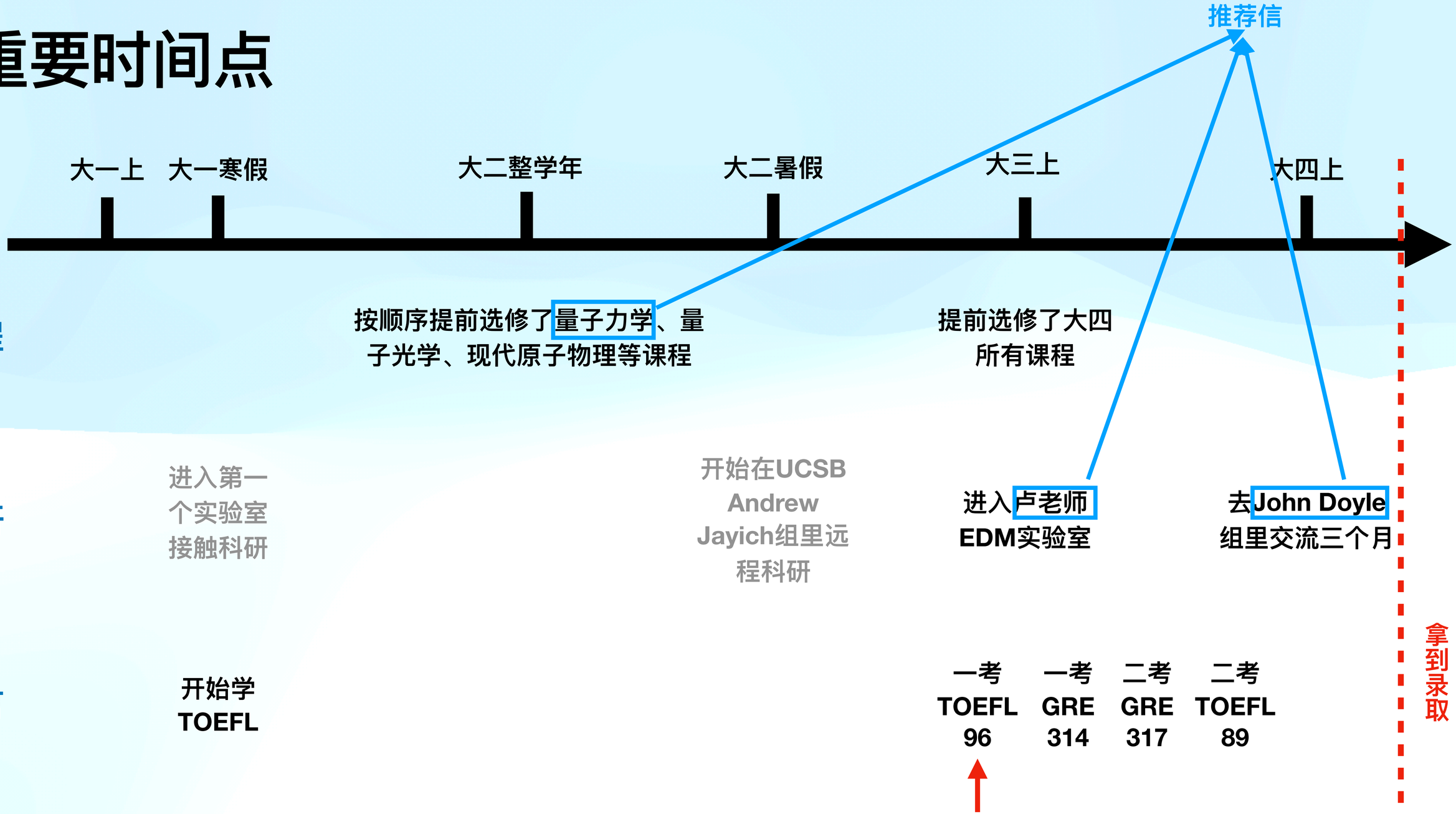
THE UNIVERSITY OF CHICAGO Divisio
the Phy

Dear Mingda,

We are very excited to offer you admission to the docto
at the University of Chicago beginning in the Autumn
by your accomplishments and believe that you will fit i
rewarding and challenging research opportunities withi
Chicago, and at local National Laboratories (Argonne a
ranging contributions of our dedicated graduate studen
scientific achievements and we hope you will choose to

- Physics PhD of Harvard, Caltech, CU Boulder, UChicago
- 绩点：4.07 （1/131， 物理学专业）
- 托福：96 (R28 L27 S18 W23)　 无GRE/GRE sub
- 我申请中最关键的地方：校内推荐信 / 暑研推荐信

重要时间点

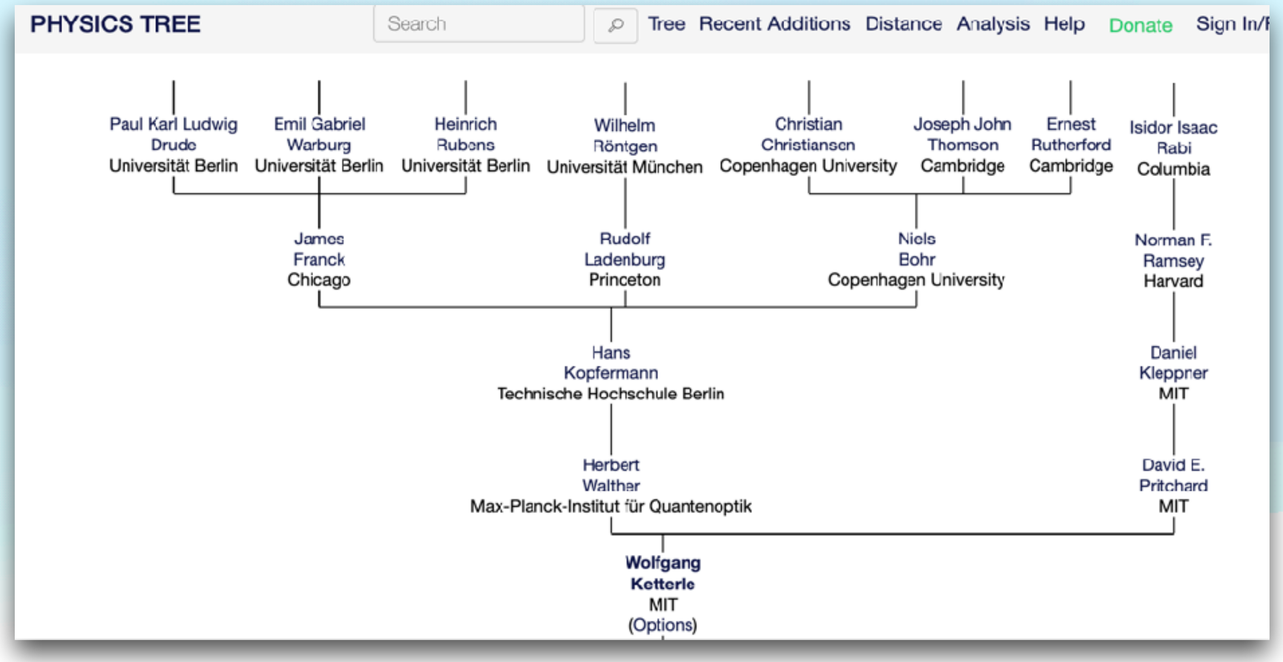

推荐信
大一上
大一寒假
大二整学年
大二暑假
大三上
大四上
课程
按顺序提前选修了量子力学、量子光学、现代原子物理等课程
提前选修了大四所有课程
科研
进入第一个实验室接触科研
开始在UCSB Andrew Jayich组里远程科研
进入卢老师EDM实验室
去John Doyle组里交流三个月
语言
开始学TOEFL
一考 TOEFL 96
一考 GRE 314
二考 GRE 317
二考 TOEFL 89
拿到录取

如何找校外导师

Factors

- 学校（地理位置，安全因素）
- 方向契合程度
- Connection：与国内和国外 Physics tree
- 论文citation、Youtube给的talk
- 氛围：打听学长，group合照
- 毕业去向

- 尽量在美国时间工作日8:00-17:00



Storys

- L同学：精密测量 experiment (EDM)
- Z同学：A姓导师

陶瓷信和简历

- General 自我介绍，表明要套暑研
- 为什么你会对我感兴趣？(展示自己能力)
- 为什么对对方感兴趣？(表明motivation)
- 再次感谢

Dear Professor John Doyle,

I'm Mingda Li, a junior student majoring in physics at University of Science and Technology of China (USTC) and I'm eager for a summer internship position in your group.

I've participated in the Yb EDM experiment, supervised by Prof. **Zheng-Tian Lu**. You can find my work in my CV. My current work focus on the build of TCMOT to generate **spin squeezing**. Besides, I finished several **graduate course** including quantum optics. And I got the National Scholarship as the **topmost student (1/291)**.

As a junior undergraduate in the field of EDM measurement, I am very excited to gain research experience in your group. Your group's work about PolyEDM using molecules has attracted me greatly. I hope that I can get the opportunity to work under your supervision. So I am writing to inquire if I can join your group for summer internship, with myself covering all the traveling, living expense, and solving all problems on visa application. Besides, If I can't go there this summer, I hope I can do some theoretical work remotely.

Thank you very much for your time. Looking forward to your reply and I attached my CV for your reference if you are interested.

Best regards,

Mingda Li

Department of Physics

University of Science and Technology of China

陶瓷信和简历

- Education
- Honors&Awards
- Research Experience
- Teaching Experience
- Skills

Mingda Li

Homepage | dslmd@mail.ustc.edu.cn | +86 15375573516

EDUCATION

University of Science and Technology of China (USTC) — Hefei, China
Bachelor in AMO Physics — Sept. 2018 - Jun. 2022
GPA (overall): 4.07/4.3 **Ranking: 1/131** (in Physics major)

HONORS

Guo Muoruo Scholarship (Highest Honor in USTC, Top 1%)	2021
Top prize of the 16th Physics Research Paper Competition	2021
Yan Jici Scholarship	2021
China National Scholarship in University of Science and Technology of China	2020
Tang Lixin Scholarship	2020
China National Scholarship in University of Science and Technology of China	2019

RESEARCH EXPERIENCES

Research Assistant | **Doyle Group** — Harvard University
Advisor: Professor **John Doyle**, Physics Department — Sep. 2021 – Dec.2021

Project 1: 2D Molecule Tweezer Array using Spatial Light Modulator (SLM) — Sep. 2021 - Oct.2021
- Goal: Generation of 2D tweezer array for CaF molecule experiment for quantum simulation
- Process: Designed and built SLM optical path; Programmed the weighted Gerchberg-Saxton (WGS) algorithm; Adaptively fed back SLM for higher uniformity and efficiency; Aberration cancelling using Zernike Polynomials
- Result: Generated 10×10 tweezer array with low aberration, high uniformity (97%) and high efficiency (98%)

Research Assistant | **Precision Measurement Research Group** — USTC
Advisor: Professor **Zheng-Tian Lu**, Physics Department — Oct. 2020 – Aug. 2021

Project 1: Ytterbium-171 (Yb171) nuclear Electric Dipole Moment (EDM) system — Jun. 2021 - Aug. 2021
- Imaging system: Wrote a camera interface program; Programmed data acquisition board
- Vacuum system: Constructed Yb-gen2 vacuum system; Designed and built an atomic beam chopper
- Laser system: Independently R&D 846nm Tapered Amplifiers for Quantum Non-Demolition (QND)

Project 2: Dual-frequency laser locking system of 798nm and 846nm — May. 2021 - Jun. 2021
- Goal: Frequency locking for Magneto-Optical Trap (MOT) and QND laser of Yb171
- Process: Designed and built the laser locking optical path; Generated error signals using the Pound–Drever–Hall (PDH) technique; Locked the laser using error signals by a homemade electronic controller
- Result: Successfully locking of two lasers into a single Ultra-Low Expansion (ULE) cavity

Project 3: Injection-Locked Amplifiers (ILA) for Atom Trap Trace Analysis — Oct. 2020 - Dec. 2020
- Goal: Laser amplification using blue ILA for MOT of Calcium
- Process: Independently R&D ILA with 423 nm laser diode; Built frequency locking optical path for ILA; Programmed LabVIEW feedback electronics for frequency stabilization
- Result: 50 times stable and long-lasting amplification.

TEACHING ASSISTANT EXPERIENCES

- Quantum Mechanics (Undergraduate Course, Prof. Wei Yi) — 2020 Fall
- Modern Atomic Physics (Graduate Course, Prof. Zheng-Tian Lu) — 2021 Spring

SKILLS

Programming: C/C++, Python, Linux(bash), QuTiP, LATEX, Qt, HTML
Software: MATLAB, Mathematica, SolidWorks, LabVIEW, COMSOL, Fushion 360
Experiment: Electronic Engineering, Machine Shop, Optical Path Building

发邮件！