

# Mingjun Gao

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## EDUCATION

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### Shanghai Starriver Bilingual School

2020-2024

**High school courses:** AP Calculus BC, AP Physics 1, AP Physics 2, AP Seminar, AP Research, AP Physics C Mechanics, AP Physics C E&M, AP English Language and Composition, AP Statistics, AP Chemistry, AP World History, AP Microeconomics, AP Biology, AH American Literature, AH British Literature, AH American Literature, Geography, H Chinese Literature I II III, AH English Composition and Research, Art, PE

### Online College-level Courses Taken

#### Multivariable Calculus

Sep 2023 - present

Harvard Extension School

#### Linear Algebra

Sep 2023 - present

Georgia Technology @edX

#### Quantum Mechanics 8.04

Jun 2022-Aug 2022

MIT Open Courseware

#### Machine Learning

Mar 2022-Jun 2022

Stanford University @Coursera

#### Ap Chemistry

Khan Academy

### Learning by-self

#### Feynman's Physics Lecture

## HONORS AND AWARDS

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**PUPC** (Physics Unlimited Premier Competition) Grade 11, Nov 2022

Global Rank 9, China Rank 2, out of 350 players

[http://physicsu.org/premier/pupc\\_2022\\_results-by-score.pdf](http://physicsu.org/premier/pupc_2022_results-by-score.pdf)

Individual-based physics competition hosted internationally

**PUEC** (Physics Unlimited Explorer Competition) Grade 11, Apr 2023

Global Rank 5, China Rank 1, out of 38 teams

[http://physicsu.org/explorer/2023\\_Explorer\\_Scores.pdf](http://physicsu.org/explorer/2023_Explorer_Scores.pdf)

Team-based, collaborative open-ended assignment that takes place every spring

**BPHO**(British Physics Olympiad)

Grade 11, Nov 2022

Global Gold

<b>CAP</b> (Canadian Association of Physicists High School Prize Exam) 2023 China Gold	Grade 11, Apr 2023
<b>Physics Bowl D1</b> Global Rank 38	Grade 10, Mar 2022
<b>Physics Bowl D2</b> China Gold	Grade 11, Mar 2023
<b>AMC</b> (American Math Competition) Aime Qualifier	Grade 11, Nov 2022
<b>USACO</b> (USA Computing Olympiad) Gold	Grade 11, Mar 2023
<b>Youth Science and Technology Innovation Competition</b> The 3 <sup>rd</sup> Award	Grade 9, Mar 2021
<b>Basketball Match of Minhang, Shanghai</b> The 2 <sup>nd</sup> Place	Grade 10, Oct 2021
<b>Basketball Match U15 of SSSA</b> (Shanghai Schools Sports Association) 2020 The 2 <sup>nd</sup> Place	Grade 9, Nov. 2020
<b>Clubs Fairs</b> The Excellent Club Award to the City Explore Club	Grade 11, 2023

## ACTIVITIES

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### [Tutoring at Schoohouse.world](#) Nov 2022-present

Tutoring Ap Physics 1, AP Physics C, Physics Competition  
Silver tutor qualifier  
Moderator of Physics sub-world from Sept of 2023  
Member of AI Team from Sept of 2023  
70 learners from 16 countries  
Held 64 sessions. Tutored 4616 minutes  
3 hours per week

### [AI Tutor of Physics Project](#) May 2023-present

I found sometimes the learner cannot get the timely guidance from the tutor due to the time difference, so I'd like to develop a AI tutor system which can help tutoring when the tutor is absent.

### [Family Responsibilities](#)

Repairing of household goods and home electronics  
Repairing the computer charger for the neighbor  
Repairing the igniter of the cooker

Repairing the desk lamp  
Repairing the mobile phone charger  
Hair dressing for myself and family  
Cooking for my family  
Be good at frying beef steak and frying egg  
Help mom for her sports to improve her insomnia

## Research Project

Colgate University

Grade 11, Mar 2023-Jul 2023

### **Research concentration on the quantum mechanics**

Title of the research paper "Perturbation Theory: Hydrogen and Alkali Atoms in Constant E-Field"

Shanghai Jiaotong University

Grade 10-12, Oct 2021-present

### **Research concentration on the "A Photo-controlled Varistor Based on Bipolar Resistance Effect".**

Solve the problem "the copper wire cannot be easily fixed" by clamping the silicon wafer and copper wire between two cleaned glass sheets, so as not to affect laser irradiation and also to fix the sample.

Successfully produced a photo-controlled rheostat with good linearity and high sensitivity

Independent Research

**An auxiliary device for improving respiratory resistance of masks** Grade 9, 2021

**Basketball shooting scoring system** Grade 9, 2020

**A Remote Query Application for the Queue System in the hospital** Grade 7, 2018

**A Kind of Replenishing Robot Reflecting Sunlight** Grade 6, 2017

## Clubs

### **City Explore Club**

Grade 10-12, Sep 2021-present

The co-founder of the club

Together with the club members to explore the traditional culture, like the antient buildings, the traditional foods and the Shanghainese.

Together with the club members to communicate by phone with the bosses of the stores in Shanghai to understand their difficulties of the businesses during the convid-19.

To expand the club members from 2 to 16

### **The Drama Club**

To be as the actor, it's interesting.

To discuss the scripts with the members each other

To play as the repairer in the drama "Cut"

When On the stage and the spotlight, I felt from Panic to silent to the enjoy of the process.

## Sports

### **The School Team of Basketball**

2014 - present

As the point guard to organize the offense and pass the ball to the right player at the right time.

As the assistant to the coach to for the training and competition, like

To develop the scoring goals system for self-training of the basketball

### **The School Team of Soccer**

2014 - present

As the midfielder to control the ball on own side, intercept the opponents for the ball, organize the offence to score goals.

## TEDx SSBS Youth Speaker

### **The Story of Nothing**

Grade 11, 2023

To discuss the “nothing” concept from the “vacuum” in physics to the nothing in life, nothing is really nothing.

## Further Physics Team

Grade 11, 2023

As a member of the further physics team, I call for 4 members to attend the PUEC (Physics Unlimited Explorer Competition), which is a team-based, collaborative open-ended assignment that takes place every spring. we studied together about the assignment and finally we ranked global 5 and China 1(tie). This is the 1<sup>st</sup> time of our school to take part in the PUEC. We all are interested this competition and I really appreciate the collaboration from my team members.

## Subject Representative of Physics

Grade 9, 2020-2021

To help teacher to collect and hand out the homework of Physics.

To answer the Physics questions from classmates