

Qiong Hu

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Education

- BS in Physics, Fudan University, Shanghai, China Expected: Jun 2019
Current GPA: **3.83** (top **1%** in the Department)
- Exchange student in Physics, University of California, Los Angeles Sep - Dec 2017
GPA for the exchange quarter: **4.0**

Research Experience

- Detect and recognize user's emotion and attention by EEG signal Mar 2018 - Present
- Develop VR programs of atomic electron orbitals on Unity Jan 2018 – Present
Making 3D electron orbital model for atoms. User can view from inside or outside of the electron cloud. User can also bring atoms together to see the effects of proximity.
- Built a path-following mobile robot Sep - Dec 2017
Worked on hardware set-up and software programming with a partner. (class project)
- Built an Internet-of-Things system, on STM32 board and Eclipse IDE Sep - Dec 2017
The user manipulates a sensor which recognizes gestures as the dot-dash-space of Morse Code. When user input concludes, the code is translated into words. I wrote the program and debugged together with three partners. (class project)
- Simulation of Chamber Effect of granular gases Mar - Jun 2017
Used Mathematica to calculate and simulate a statistical rule of multiple collisions with two partners. (class project)
- The effect of traffic light duration on the level of traffic congestion Oct - Dec 2016
Based on observations of real traffic conditions, I extracted data from video of an intersection, and used MATLAB to simulate the level of congestion when the duration of the traffic light is changed, with five partners.
- Research on the relationship between number of roads and level of congestion Sep 2016
Used MATLAB and cellular automata algorithms to simulate traffic congestion with a range of road numbers and layouts, with two partners.
- Prepare and characterize thin layer hBN (hexagonal Boron Nitride) Jul 2016 - Present
Laboratory work: investigated enhancement of the optical contrast of hBN, used the tape-stripping method to obtain thin samples, imaged by optical microscopes and AFM.

Honors and Awards

- *XRS Education Scholarship (First Prize)* for outstanding students Dec 2017
- *2017 Honors Student Award* in Physics. Won for exceptional academic performance in *National Top Talent Undergraduate Training Program*. Jun 2017
- The 33rd *National Physics Contest* (Professional Group, Shanghai) **Second Prize** Dec 2016
- The 8th *National Mathematical Contest* (Shanghai) **Second Prize** Oct 2016
- 2016 *HEPC National Mathematical Modeling Contest* (Shanghai) **Third Prize** Oct 2016
- *National Scholarship*. Won as the **best** student in the department. 2015 - 2016

Publications

- Zezheng Xiong, **Qiong Hu**, "The extension of Kubo Equation in Quantum Mechanics."

Chinese Mathematic Learning and Research Journal, Feb 2018(3).

- Zezheng Xiong, **Qiong Hu**, “A Law of Convergence extended by a Series Problem.” *Chinese Mathematic Learning and Research Journal*, Jan 2018(1).

Skills

- English ability: excellent in reading and listening. Passed CET6 and TOEFL.
- Other languages: beginner in French, German and Japanese.
- Excellent in *Shanghai College Computer Ranking Examination*, Level II (C Programming)
- Software: Mathematica, Origin, MATLAB, LabVIEW, Arduino, Quartus II, Eclipse, Unity, Anaconda, and Ubuntu.
- Programming language: Visual Basic, C, C#, Python, JavaScript, Verilog.
- Instrumentation: InSb magneto-resistive sensor, GaAs Hall probe, x-ray diffraction and spectroscopy, γ -ray spectrometer, Michelson interferometer and other standard laboratory instruments.

Other Experiences

- Took part in several CTF (Capture the Flag) international competitions as a team member, and provided questions for *CTF international competition. Jan 2018 - Present
- Took part in Hackathon, and learned about Android and IOS development. Nov 2017
- *Physics Majors Organizer of the Department*. Organized academic activities, such as inviting lecturers and organizing lectures. Sep 2016 - Jun 2017
- *Study Secretary (leader) of the Class*. In charge of class activities related to study, such as answering questions and passing suggestions of students to professors. Sep 2015 - Present