

# Haozhe Su

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## EDUCATION

University of Science and Technology of China(USTC) Hefei, China

- B.S. in Nuclear and Particle Physics, School of Physical Sciences Aug. 2014- Jun. 2018
- GPA: 3.50/4.30 or 85.72/100.00

Rutgers University New Brunswick, New Jersey

- PhD. in Computer Graphics, Department of Computer Science Aug. 2018- present
- GPA: 4.00/4.00

## RESEARCH EXPERIENCES & PROJECTS

- **2D Interactive Smoke Simulation (Project)**  
Department of Computer Science, Rutgers University Oct. 2018 - Dec. 2018  
Advisor: A/Prof.Dr.Aanjaneya, Mridul
  - Apply numerical methods and solved Navier-Stokes equation by splitting the original equation into three major parts: advection, diffusion and projection.
  - Design a GUI using QT, which helps us interact with the smoke. We can add source to the domain by simply using mouse, pause/restart the simulation and run the simulation frame by frame.
- **3D Animation for Educational Purpose Using Blender (Project)**  
Department of Science Communication, USTC Oct. 2017 - April. 2018  
Advisor: A/Prof.Dr.Zhang, Yanxiang
  - Provide a simple and straightforward view of some basic concepts and structures in mathematics, physics, engineering and even music.
  - Use Blender to create scientific models and take advantage of its built-in Cycles renderer to make every model realistic and make every animation physics-based.
- **Rigid Body Simulation and Collision Detection (Project)**  
Department of Computer Science, Rutgers University Sept. 2018  
Advisor: A/Prof.Dr.Aanjaneya, Mridul
  - Implement the unconstraint movements of a given rigid body. Use ODE to update properties like location, velocity, angular momentum, etc.
  - Take collisions into account and disallow inter-penetration
- **Visualization of Signed Distance Function(SDF) (Project)**  
Department of Computer Science, Rutgers University Oct. 2018  
Advisor: A/Prof.Dr.Aanjaneya, Mridul
  - Given an input shape, specified using an analytic signed distance function, store it as a discrete signed distance function on the nodes of a uniform Cartesian grid.
  - Given a random point in space, write routines to identify whether the point is inside or outside the shape.
  - Project the point to the closest point on the surface of the shape.
- **Study of  $J/\psi \rightarrow \gamma K_s K_s \pi^0$  Using Data Collected With BESIII Detectors (Presentation)**  
Department of Modern Physics, USTC Feb. 2017- Oct. 2017  
Advisor: A/Prof.Dr.Zhu, Yingchun
  - Implement event selections, background estimations and signal fitting.
  - Make comparisons between data and M-C simulation results.
- **Study of Uniform Magnetic Field in the Prototype 3D Magnet (Presentation)**  
Summer Research Program, University of Tennessee, Knoxville June. 2017- Aug. 2017  
Advisor: Prof.Dr.Kamyshkov, Yuri
  - Examine the prototype 3-D magnet for future study of mirror neutrons.

- Perform calculations of 3-D magnetic field in developed C++ code, with environmental magnetic field measured and subtracted.
- Analyze magnet performance data and compared them to calculation results.
- Examine measurement errors and found their sources.

- **Energy Regeneration System Based on Piezoelectric Effect** (*Presentation*)

**Electronic Circuit Laboratory, USTC**

*Sept. 2016- Dec. 2016*

**Advisor: A/Prof.Dr.Wei, Xiantao**

- Select proper material(PZT) and chose its shape and size.
- Decide an appropriate way to support the PZT pieces and designed an integration system, which was a device that accomplished triggering, energy conversion and storage.
- Calculate the power that it produced when we exerted a certain force on it.

- **Neutron-Transport Simulation Using M-C Method**

**Department of Modern Physics, USTC**

*Nov. 2016*

**Advisor: Prof.Dr.Zhang, Renyou**

- Utilize Direct Simulation Monte Carlo Method (DSMC) and the Improved Monte Carlo Method(Weighted Method) to simulate the movement of neutrons.
- Calculate transmittance and energy distribution of transmitted neutrons.

## SKILLS

- **Programming Language** C/C++
- **Modeling Tool** [Blender](#), [Maya](#)
- **Digital Art Tool** [Sketchbook](#), [Processing](#)