

Dehui Kong

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University of Jinan, Jinan, Shandong 250024, China

RESEARCH INTERESTS

Human-Computer Interaction, Virtual Reality, Computer Vision, Deep Learning, etc.

EDUCATION

2021 - 2024 **Master of Computer Technology in Human-Computer Interaction**

University of Jinan, Shandong, China

Supervisor: Prof. Zhiquan Feng

2017 - 2021 **Bachelor of Computer Science and Technology**

University of Jinan, Shandong, China

PUBLICATIONS

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- [1] **Dehui Kong**, Zhiquan Feng, Tao X, et al. Intentional Understanding and Human-Computer Collaboration: A Smart Pen for Solid Geometry Teaching. *International Journal of Human-Computer Interaction*, 2023. (JCR Q1/CCFB/SCI 3, Status: Published)
 - [2] **Dehui Kong**, et al. PenLab: Towards Understanding of Active Collaboration for Solid Geometry Teaching. *In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems*. (Status: Accepted)
 - [3] **Dehui Kong**, Zhiquan Feng, et al. Advancing Precision and Interaction in Solid Geometry Teaching: A Collaborative Approach with Smart Pen. (Status: In preparation)
 - [4] **Dehui Kong**. A dwell point detection algorithm for smart pen. [C]. *2022 2nd International Conference on Computer Graphics, Image and Virtualization (ICCGIV)*. (Status: Published)

HONORS & AWARDS

2023 The Second Prize Scholarship, University of Jinan (Top 20%)

The First Prize for the 18th "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition, University of Jinan (Top 10%)

The Third Prize for the 9th China International "Internet+" Innovation and Entrepreneurship Competition for University Students, University of Jinan (Top 20%)

- 2022** The Second Prize for the 17th Postgraduate Electronic Design Competition, North China Division (Top 25%)
The Third Prize for the 5th Virtual Reality Technology and Application Competition (Top 30%)
The Third Prize Scholarship, University of Jinan (Top 30%)
- 2021** The Second Prize Scholarship, University of Jinan (Top 20%)
- 2018** The Third Prize Scholarship, University of Jinan (Top 15%)

PROJECT EXPERIENCE

1. The Open Teaching Experiment Environment of Virtual Reality Integration with Multimodal Natural Interaction

Sept. 2021 – present

National Key R&D Program, China.

- Project introduction: To address the challenge of unbalanced and insufficient high-quality teaching resources, this project develops a multi-modal, naturally interactive, virtual-real integration open teaching experimental environment to address the real-time simulation challenges associated with virtual-real integration. Additionally, the project dedicates itself to developing innovative models for teaching experiments.
- Personal contribution: By leveraging the Unity engine, along with C# and Python technologies, I designed and developed a smart interactive pen and a virtual geometry teaching platform tailored for solid geometry experimental instruction. The system utilizes diverse technologies, including multimodal fusion, to establish an intent comprehension model for capturing user intentions and realizing active human-computer collaboration interaction. The system addresses issues related to unclear lectures and drawings in solid geometry teaching, providing enhanced technical support for geometry experimental instruction.

2. Jinan City Self-Cultivation Innovation Team Project

Jun. 2021 – present

Jinan city Research Program, Jinan, China.

- Project introduction: To address the issues of excessive manpower and potential oversight of student operational details in middle school experimental exams, this project utilizes Python and deep learning technology to develop an examination system tailored for middle school students' physics, chemistry, and biology experiments.
- Personal contribution: Engaged deeply in code development using Python and YOLOv5 technology, led the team in the development of multiple experimental sub-projects, and conducted live demonstrations with listed companies, school teachers, and students.

PROFESSIONAL SKILLS

Virtual reality development technology: Unity Engine (including NGUI, Vuforia, etc.).

Artificial intelligence development technology: Machine Learning, Deep Learning, Object Recognition, Gesture Recognition.

Programming Languages: Python (including Pytorch framework), C#, JAVA, C/C++.

Front-end development technology: HTML, CSS, JS, etc.