Rui-Cheng Wang

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Education

School of Computer Science and Technology | **USTC**   Aug. 2018 – June. 2019
                                                                              Anhui, China

School of Data Science | **USTC**   Aug. 2019 – June 2022
MAJOR & EXPECTED DEGREE: BACHELOR OF DATA SCIENCE   Anhui, China

- **Major GPA:** 4.03/4.3
- **Overall GPA:** 3.92/4.3
- **Highlight Courses:** Computer Graphics: 99/100, Introduction to Computer System: 100/100, Mathematical Modeling: A+

Experience

Graphics & Geometric Computing Laboratory (GCL) at USTC   May 2020 – Present
ADVISED BY PORF. LI-GANG LIU   Anhui, China

- I am working on rendering of curved ray in Riemannian geometry.
- Currently I am also doing survey on differentiable rendering, geometric deep learning and differentiable simulation.

Quantitative Investment Department of Yingyang Asset Management Co.,Ltd.   Oct. 2020 – Present
QUANTITATIVE INVESTMENT INTERN   Anhui, China

- Stock exchange data analysis with modern machine learning approaches.

Projects

Non-Euclidean Engine   [Code] [Video]
CO-DEVELOPER

- Our final project in Computer Graphics course. Advisor: Prof. Li-Gang Liu.
- Based on Riemannian geometry theories, we explored and visualized the immersive view in non-Euclidean geometry(eg. 3D hypersphere, hyperbolic space, blackhole). The engine could run either in realtime mode (OpenGL) or ray tracing mode.

DiffNum - A Lightweight Differentiable Programing Library   [Code]
DEVELOPER

- DiffNum performs autograding via simple forward propagation methods. To use it, you only need to substitute native float and double types with DiffNum types. Thus it is flexible and efficient in lightweight usage. By using it recursively, you can obtain higher order derivatives. It is also supported in CUDA kernels.

Image Segmentation Enhanced Style Transfer   [Code]
CO-DEVELOPER

- Our final project in Computer Vision course. Advisor: Prof. Yang Cao.
- We incorporated Image Segmentation into the process of Style Transfer, which effciently solved the problem that different elements (e.g. background and animal) interfered with each other when transfering horses to zebras.

MathSLib - A Computer Algebra System Library   [Code]
CO-DEVELOPER

- It is a C++ library for a symbolic computing and simple scientific computing. It can simplify and evaluate symbolic expression. The *rules* of evaluation can be easily extended through the *match-replace* algorithm. The library also offers an interpreter converting text expressions into STD functions.

HONORS AND AWARDS

First Price in Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)   Fall 2019
The first prizes accounted for 0.75% in total. (295 out of 39293)

CCF Big Data & Computing Intelligence Contest   Fall 2019
Team account ranked 6th, personal account ranked 32nd out of 2272 teams.

Wang Lao-Ji Schoolarship (Funding of CNY 5,000)   Fall 2020
Awarded to students with outstanding comprehensive abilities.   USTC

Outstanding Student Scholarship Silver Award (Funding of CNY 2,000)   Fall 2019
Awarded to students with excellent achievements   USTC

EXTRACURRICULAR ACTIVITY

President of Student Union of School of Computer Science and Technology   Fall 2020 – Present
USTC

Volunteer in Open Week of Science and Technology   May 2019
USTC

Volunteer in the Computer Science Winter Camp of The Talented Young   Jan. 2019
Children and Youth Science Center of China (CYSC).   Sun Yat-Sen University

SKILLS

Programming

- C/C++ (CUDA, OpenGL, Eigen, OpenCV)
- Python (NumPy, Pandas, Matplotlib, Keras, PyTorch, Taichi)
- C#
- Mathematica