

Huiyu Xie

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EXPERIENCES

The Julia Language - Trixi Framework

Mar. 2024 to Present

Open Source Developer

github.com/huiyuxie/trixicuda/issues

Enhance performance support for PDE equations and numerical fluxes within Trixi (a high-order numerical simulation framework for hyperbolic PDEs) by ensuring type stability of function for both double precision and single precision floating-point numbers. (In progress.)

Google Summer of Code - The Julia Language

May 2023 to Present

Open Source Developer

summerofcode.withgoogle.com/huiyuxie
julia.gsoc2023.project/huiyuxie

Developed GPU support for Trixi (a high-order numerical simulation framework for hyperbolic PDEs) to accelerate the discretization of hyperbolic PDE solvers, focusing on the Discontinuous Galerkin Collocation Spectral Element Method with tree mesh. (In optimization.)

NVIDIA RAPIDS - Graph Analytics Library

Oct. 2023 to Dec. 2023

Open Source Developer

github.com/rapidsai/cugraph/pull/huiyuxie

Enhanced the Dataset API of cuGraph with support for edgelist downloading and graph formation on multiple GPUs.

Shenzhen Research Institute of Big Data

June 2020 to May 2022

Student Researcher

sribd.cn/en/article/smartcampus

Leveraged Shannon Entropy, Approximate Entropy, Sample Entropy, and a Lempel-Ziv-based Entropy Estimator on the student trajectory data, improving the correlation between student trajectory and academic performance and creating entropy-based features for predicting student performance.

EDUCATION

Santa Clara University, School of Engineering

Sep. 2022 to June 2024

Master of Computer Science

The Chinese University of Hong Kong, School of Data Science

Sep. 2018 to May 2022

Bachelor of Statistics

SELECTED PROJECT

Image Recovery and Optimization

Sep. 2021 to Dec. 2021

Group Leader

github.com/huiyuxie/imagemoosaic

Constructed linear convex optimization problems, including total variation minimization and sparse reconstruction, based on the damaged images, solved the problems to reconstruct the missing information from images.

SKILLS

Programming Languages: Proficient in Python/C++/Java/SQL/R/MATLAB/Julia; Familiar with C/C#/JavaScript; **Cloud Computing:** AWS; **Distributed/Parallel:** CUDA/Open MPI/OpenMP/Spark; **Tools & Libraries:** NumPy, pandas, SciPy, scikit-learn, Matplotlib, XGBoost, Dask, RAPIDS

SELECTED AWARDS

CUHK School of Data Science Dean's List

Sep. 2020

The Mathematical Contest in Modeling (MCM) S Prize

May 2019