

XI HAN

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EDUCATION

Department of Computer Science, Stony Brook University

Aug 2019 – Present

Ph.D. in Computer Science (In progress, expected by Spring 2026) | GPA: 3.9/4.0

Department of Computer Science and Technology, Tsinghua University

Aug 2015 – Jul 2019

B.E. in Computer Science and Technology | GPA: 3.25/4.0

PUBLICATIONS

- **Xi Han**, Fei Hou, Hong Qin, “UGrid: An Efficient-And-Rigorous Neural Multigrid Solver for Linear PDEs”, In Proceedings of the *Forty-first International Conference on Machine Learning*, 2024.
- Song-Hai Zhang, Ruilong Li, Xin Dong, Paul Rosin, Zixi Cai, **Xi Han**, Dingcheng Yang, Hao-Zhi Huang and Shi-Min Hu, “Pose2Seg: Detection Free Human Instance Segmentation”, *IEEE Conference on Computer Vision and Pattern Recognition*, 2019.

WORK EXPERIENCE

Computer Graphics Lab

Stony Brook University | Research Assistant | Teaching Assistant

Aug 2019 – Present

Advisor: Hong Qin, Professor at Department of Computer Science, Stony Brook University

- Conducted research in intelligent modeling. Involved concepts: differentiable vector graphics, PDE-based modeling, etc.
- Implemented multiple advanced research projects related to graphics and numerical analysis (GPU-based differentiable PDE solvers). Also cooperates with Computer Vision lab on AI/HPC topics, and deeply involved in CV model training/inference performance optimization. Involved techniques: CUDA kernel fusing, performance profiling, and customized cache-friendly AI operators such as customized flash attention, fused GEMM, 2D mamba, etc.
- Hosted lectures on OpenGL programming with C++/Python, the implementation details of computer graphics applications and algorithms, and the state-of-the-art research topics on graphics and physics-based modeling.

Computer Graphics and Animation Lab

University of Texas at Dallas | Research Assistant

Sep 2018 – Nov 2018

Advisor: Xiaohu Guo, Professor at Department of Computer Science, University of Texas at Dallas

- Worked on the 3D face reconstruction project with a local Samsung research lab. Also constructed a human face model dataset for further research purposes.
- Configured a Linux workstation for deep learning purposes from zero and deployed neural network models on it.

Graphics and Geometric Computing Group

Tsinghua University | Research Assistant

Jan 2017 – Jul 2019

Advisor: Song-Hai Zhang, Professor at Department of Computer Science and Technology, Tsinghua University

- Deployed a MobileNet module on IOS platform with Apple’s CoreML framework, and delivered an IOS app for a human segmentation (in Swift and Objective C++).
- Optimized the model used in the app (increased accuracy and added key point recognition) and achieved 10x speedup in FPS.

SKILLS

- Computer programming, high-performance computing, computer graphics, machine learning, and Linux system skills.
 - ❑ Expertise in AI/HPC: AI-related operators, AI training/inference performance optimization. Involved topics: PyTorch CUDA extensions, CUDA kernel profiling, operator fusing, and optimization techniques.
 - ❑ Expertise in programming languages: CUDA/C++ (OOP, STL, Metaprogramming, and Concurrency), and Python.
 - ❑ Expertise in frameworks: PyTorch (including profiling and fine-tuning of C++/CUDA extensions) and OpenGL.
 - ❑ Other proficiencies in languages: Bash/CMake, MATLAB, Java, Objective C/C++, Swift and Assembly.
- Teaching skills:
 - ❑ A wealth of experience in teaching both undergraduate and graduate courses in C++/Python and Computer Graphics.
- Language Proficiencies:
 - ❑ Chinese (Mandarin) (Native speaker);
 - ❑ English (Proficient for working scenarios. TOEFL: 106/120; GRE: 324/340 + Writing 3.5);
 - ❑ Japanese (Sufficient for basic working scenarios. JLPT: N1 173/180, N2 169/180).