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 41st 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”, *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 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).