Song Shi

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in Song Shi　　⌗ GreenyMustard

Education

Dartmouth College	*Sep 2024 – Jul 2026*

Master of Computer Science with Concentration in Digital Arts
75% tuition based scholarship

Tongji University	*Sep 2017 – Jul 2021*

Bachelor of Engineer in Environmental Design
Third-class scholarship for outstanding students

Experience

Rendering Research and Development Intern	*Nanjing, China*
D5 Render	*Dec 2025 – Present*

- Implementing volumetric rendering techniques in the real-time renderer *D5 lite*. Implemented the artistic control tool for clouds modeling using vertical profile method and perlin-worley noise. Improved performance 12x by implementing temporal reprojection. Improved the convergence rate by implementing STBN (Wolfe et al., 2022). (C++, HLSL)

Research and Teaching Assistant	*Hanover, NH*
Dartmouth College	*Jan 2025 – Dec 2025*

- TA for COSC 70 Foundations of Applied Computer Science; COSC 29.06 Digital Tangible User Interfaces; COSC 87/287 Rendering Algorithms.
- Research Assistant in Dartmouth VCL lab, focusing on light transport, stochastic geometry representation. Researching on improving the Next Event Estimation for anisotropic Gaussian Process Implicit Surfaces.

Guest Lecturer	*Shanghai, China*
University of Shanghai for Science and Technology	*Mar 2024 – Apr 2024*
Software Engineer	*Shanghai, China*
Bigmind	*Aug 2022 – Jan 2024*

- Developed high-fidelity real-time graphics for *SimuloCity*, a Unity-based automotive simulation platform, featuring realistic weather effects and GIS-based environments; optimized performance to maintain 120 FPS at 2K resolution on an RTX 3080, expanding extreme-condition scenario coverage.
- Developed an automotive components configuration and evaluation system using neuroevolution. Applied GANs to synthesize more data from limited traffic-flow samples to support automotive simulation. Integrated them into Unity, and received the Best Innovation Award at the 2023 China International Import Expo.

Software Engineer	*Shenzhen, China*
FuturePlus	*Aug 2021 – Jul 2022*

- Designed and implemented 3D procedural generation algorithms in Blender and Unreal Engine, accelerating urban planning workflows by 90% across two development sites totaling over 3,900 hectares.

Projects

PBR Path Tracing Renderer with unbiased Monte Carlo integration	*BlogLink* ↗

- Integrated volume path tracing with importance sampling in the framework of null scattering and environmental map with importance sampling, on the Dartmouth College CS287 path tracing framework. (C++)

Ocean Simulation in Unity	*GithubLink* ↗

- Implemented Stockham GPU FFT to simulate ocean waves in Unity with 650+ FPS in 4K with RTX 4090.

Skills

Languages: C#, C++, Python, JavaScript.
Technologies/APIs: Unity, Unreal Engine, Blender, OpenGL, Git, Vulkan, PIX, HLSL.