Aaryaman Vasishta

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EDUCATION

UNIVERSITY OF TOKYO
Masters in Information science and Technology
Tokyo, JP
Computer Graphics Group
Advisor: Toshiya Hachisuka
Expected Graduation March 2021
GPA: 3.83

PUNE UNIVERSITY
BE in Computer Eingineering
2012-2016 | Pune, IN
Pune Institute of Computer Technology
First Class with Distinction

LINKS

Github:// **jammm**
BitBucket:// **jammm**
Quora:// **Aaryaman-Vasishta**

COURSEWORK

Computer Graphics
Multithreaded and Distrib. Computing
Algorithms and Data Structures
Advanced Operating Systems
Special topics in HCI

SKILLS

PROGRAMMING
• C • C++ • Python
• Bash • x86 Assembly • Kotlin

VERSION CONTROL
Git • Perforce

TOOLS
vim • Visual Studio • Singularity
DirectX • SLURM • MySQL • Jupyter
Cassandra • Kubernetes • Docker

INTERESTS
FOSS • Light Transport Simulation
Machine Learning • Real-Time Rendering

OPEN SOURCE

GOOGLE SUMMER OF CODE
Student in 2015 and 2016 for WineHQ
Mentor in 2018 for WineHQ

MISC. OSS CONTRIBUTIONS
Mitsuba 2 • nouveau • ScummVM
Chromium • Point Cloud Library
Appleseed • Zandronum

EXPERIENCE

RAKUTEN | Software Architect/Lead Engineer | Tokyo, Japan
October 2016 – March 2019

- Deployed large scale, zero-downtime, cloud-native core ecosystem services, setup **global Kubernetes and Cassandra clusters** serving **billions** of requests daily. Contributed to security and efficiency savings of **¥12 million/year**.
- Cloud consulting: helped setup private interconnect, created security best practices and MFA for all cloud users in the department using hardware keys.
- **Weekly organization-wide code and security reviews** ensuring compliance with best practices and promoting Inner Sourcing techniques.
- **Mentoring and on-boarding of new engineers and interns** from University of Waterloo and other Canadian universities as part of their Co-Op program. Setup of training projects and relevant infrastructure. Projects were deployed in production.

RAKUTEN INSTITUTE OF TECHNOLOGY | Tokyo, Japan
July 2018 – March 2019

- Research and implementation of soft-segment background removal of e-commerce product pictures using deep learning.
- Python, MATLAB, Jupyter, Bash.

UBISOFT | Intern Gameplay Programmer, Pune studio
January 2016 – May 2016

- Worked on porting and remastering South Park™: The Stick of Truth™ to the PS4 and Xbox One, fixing gameplay, engine bugs and implemented new features.

PROJECTS

PATH TRACER | Physically based renderer used for research
2019 - Present

- Cross-Platform and Written from scratch using C++17.
- Current features: Live preview, multi-threaded rendering, Parallel SAH BVH. Integrators: Path Tracing with Next-Event-Estimation, MIS, PSS-MLT, PRT using Spherical Harmonics
- BSDFS supported: Diffuse, Phong, Rough conductor using GGX/Beckmann microfacet model, Dielectric and Metal.

WINEHQ | Open-Source Compatibility layer for running Windows programs on POSIX-compliant OS's
2015 - 2018

- Implemented the foundations of Microsoft's Direct3D Retained Mode - from the base IDirect3DRM class to IDirect3DRMTexture and IDirect3DRMDevice, improving compatibiltiy across legacy applications and games.
- Written in C, using black-box reverse engineering.

GLSL-SANDBOX PLAYER | Kotlin Port of glslsandbox
2017

- Kotlin, LWJGL, GLSL. Supports all shaders from glslsandbox.com.

JANGINE | Real-time rendering engine
2014

- DirectX 11, C++, ASSIMP, HLSL.

SCHOLARSHIPS

2019-2020 Awarded the JASSO scholarship.