SAYANTAN DATTA
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Education

McGill University	MSc, Computer Science-Thesis	September 2016 - Present	Current GPA : 4.0/ 4.0
NIT, Durgapur, India	B.Tech, Electronics and Comm.	July 2009 - July 2013	GPA : 8.91/10
CBSE, India	Senior School Examination	March 2009	Average: 94.6%

Current Research

- Building friction model from microfacet distribution.
- Variance reduction in path tracing using control variates.

Skills

Languages(Decreasing mastery from left to right): *C, C++, Java, Python, Javascript.*
APIs(Decreasing mastery from left to right): *Matlab, OpenCL, OpenGL/WebGL, Vulkan.*
Softwares and Libraries used: *Bullet SDK, Ogre 3D, Numpy, Sklearn, Cuda, Ubuntu, bash, vim, Visual Studio.*

Class Projects

- Real time rigid body simulation using GPUs.
- Detecting Crops, Water bodies and Roadways in satellite images using CNN and other Machine Learning techniques.
- Real time face detection using PCA Eigenfaces method.
- Implementing path tracer with BVH, Brdf and light sampling, MIS, explicit path tracing and Analytic LTC integrator.
- Detecting migration pattern of birds and path prediction using RNN.
- Mixed digit classification using CNN.

Other Projects

- Accelerating cryptographic hashes using GPU in John-The-Ripper password security auditing tool(3 years). Top contributions - Mask mode password generation on GPUs and Perfect hash table for GPUs.
- Linux system administration using browser based GUI application(1 month).
- Worked as full stack developer for building Web based Business Application(1 year).
- Erection and commissioning of Distributed Control System in a 2x600MW power plant(2 years).
- Gate level simulation of 8-bit RISC processor (Undergraduate project).

Extra coursework:

- Coursera: Heterogeneous Parallel Programming, 2013.
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- Coursera: Algorithm Design and Analysis, Stanford University.
- Coursera: Compilers, Stanford University.
- Coursera: Machine Learning, Stanford University.
- Coursera: Image and Video processing, Duke University.
- edX: Foundations of Computer Graphics, UC Berkeley.

- Coursera: Hardware Software Interface, University of Washington.

Work:

- Damodar Valley Corporation, Assistant Engineer(Instrumentation), September 2013 - August 2016.
- Google Summer of Code 2013, Project: John The Ripper, June 17 - Sept 27.

Volunteer Experience:

- Selected as a student volunteer at Siggraph Los Angeles 2017.
- Selected as a Micro Observer to facilitate General Assembly Election on 21st April 2016 in India.
- Selected as a TA for Coursera Heterogeneous Parallel Programming course, January 2014.
- Open-source developer for John-The-Ripper password security auditing tool for 3 years.

Other Achievements:

- 97.25% Aggregate in Sciences + Mathematics in Senior School Exam, 2009.
- Rank 5th in Indian Junior Mathematics Olympiad 2006.