Resume of Anders P. Museth

Objective

I recently graduated from UC Berkeley in Computer Science. I am hardworking and passionate about computer graphics, machine learning and software engineering. I seek full-time employment so I can put my skills to practical use.

Professional Experience

Simulation Technology Intern at Nvidia **Feb. 2024 – present**

- Working on character animation in the cloud for Omniverse
- Studied gRPC cloud API

Simulation Technology Intern at Nvidia **May 2023 – Aug. 2023**

- Researched and developed a dynamic particle system and a cloth simulator in Omniverse using Kit.
- Researched and developed geometry and physics algorithms in Warp
- Optimized CUDA kernels for physics simulations.
- Profiled large call-stacks executing on both host and device.
- Improved system efficiency by 50 percent through strategic optimizations.
- Developed constraints for Extended Position-Based Dynamics (XPBD) and formulated operators for particle and cloth systems, e.g. drag fields.
- Engage in Agile team projects and navigated complex codebases.

Projects

Neural Radiance Fields (NeRF)
Implemented the original NeRF research paper in 2D and 3D, including differentiable volume rendering.

Artistic Style Transfer
Utilized a pre-trained classification convolutional neural network (VGG19) as filters for performing style transfer on images.

FLIP Fluid Solver
Developed a 3D fluid (FLIP) solver that was recognized as one of **Berkeley's top CG projects in 2023**. I am currently optimizing this solver with CUDA.

Researched "Neural Hash Functions"
Graduate-level research project on the use of Reinforcement Learning for developing optimized hash functions with minimal collisions of keys.

Designed RISC-V CPU
Software design of RISC-V CPU with ALU pipelined branching, control logic unit, branch comparator, register file, control status registers, and machine code decoder.

Additional Experience

Bosei Sports College, Denmark **Spring 2022**

Spent a semester in Denmark to explore my heritage and maintain my second citizenship. Attended Bosei Sports College to study e-sports, game theory, volleyball and Japanese Language.

Study Abroad, London **Fall 2019**

Studied a semester in London, through Berkley's Global Edge program. This allowed me to explore foreign cultures and take unique classes like British Museums and Theaters.

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Education

University of California Berkeley **2019 – 2023**
Bachelor in Computer Science **GPA: 3.83**

Pasadena High School, CA **2015 – 2019**
Graduated in Top 10 of Class of 2019

Skills

Programming Languages
Python, C++, C, CUDA, Java, Go, Julia, RISC-V, Ruby, Javascript, HTML, CSS, x86, C# , SQL
Programming Tools/Software
Pytorch, Warp, Numpy, Omniverse Kit, gRPC, NSight, gdb, Git, GitHub, Cucumber, Logisim, Unity, IntelliJ IDEA, Rails
Operating Systems
Windows, Linux, OSX

Selected Courses at UC Berkeley

- Introduction to Software Engineering (CS169A)
- Introduction to Artificial Intelligence (CS188)
- Introduction to Machine Learning (CS189)
- Foundations of Computer Graphics (CS184)
- Computer Security (CS161)
- Data Structures (CS61B)
- Deep Reinforcement Learning (CS285, graduate course)
- Visualizing and Understanding Deep Neural Networks (CS182)
- Efficient Algorithms & Intractable Problems (CS170)
- Computer Vision & Computational Photography(CS180)
- Computer Architecture & Machine Structures (CS61C)
- The Structure and Interpretation of Computer Programs (CS61A)
- Discrete Mathematics and Probability Theory (CS70)
- Multivariable Calculus (Math 53)
- Linear Algebra and Differential Equations (Math 54)
- Programming for Mathematical Applications (Math 124))

Awards

Caltech's "Math Academy, Solv" **2019**
Multivariable Calculus and Linear Algebra
1st place for individual competition
2nd place for team competition

Caltech's "Chemistry Bowl" **2017**
1st place.

Pasadena School district's "Math Field Day" **2016**
Gold medal (1st place)