Jon Baker

Graphics and GPGPU Programmer

740-591-5195 - Athens, OH 45701 – jb239812@ohio.edu

Objective

   Looking to explore new challenges related to graphics programming, where I can apply my programming abilities and mathematical knowledge. I am excited about the potential of modern GPUs and look forward to exploring applications.

Education

Ohio University Class of 2020 (Graduated December 2019)
- BSEE in Computer Engineering – Major GPA: 3.112 (4.0 Scale)

Work Experience

Ohio University Stocker Center Computer Labs (2012-2020)
- Installing, Imaging and Maintaining of 100+ Computers with Software for Engineering Students
- First Line Technical Support for Engineering Computer Labs
- Worked 20-28 Hours while a Full Time Student

Selected Projects – See jbaker.graphics/writings for More Complete Listing, as well as Detailed Project Writeups.

Voraldo: An Interactive Volume Editor
- GUI Interaction to Set Geometry Parameters and Issue Draw Calls
- Heavy Use of OpenGL Compute Shaders for Modeling, Volumetric Lighting and Other Operations
- Per-Pixel Raycast Direct Volume Rendering with Alpha Blending of Voxel Samples Written in GLSL

Physarum Polycephalum Simulation:
- Combination of Agent-Based and Continuum-Based Simulation to Model the Behavior of Physarum Polycephalum Slime Mold
- All Computation Takes Place on the GPU Using GLSL

Markov Chains for Text Generation
- Done Using Only C++ STL Containers

SoftBodies: Realtime 3D Soft Body Physics
- Multithreaded Simulation Update Using C++
- GUI Set Up for Tuning Simulation Parameters

Programming Experience

- **Languages**: Primarily work in C++ (about 5 years experience), I have had exposure to C, GLSL, Python 3, HTML5, Javascript, Processing, Shadertoy, MATLAB, VHDL, Verilog and assembly (MIPS, PIC)

- **Tools**: Experience with OpenGL 4+, Including Image Load/Store, Compute Shaders, SSBOs and GLSL Atomic Operations, SDL2 C++ bindings, Renderdoc, 8+ Years Using Linux, About 1 Year Using Vim, Experience with Word Processing, Spreadsheet and Presentation Software

- **Math**: Calculus, Probability & Statistics, Linear Signals and Systems, Diff Eq, Strong Intuition for 3D Vector Math

Awards and Activites

- Eagle Scout Rank (BSA Troop 71, September 22, 2011) and Lifetime NESA Member
- ACM SIGGRAPH Member and Annual Conference Attendee
- Maintain a Personal Website using HTML5, CSS and Javascript
- Return Speaker at the Graphics Programming Virtual Meetup hosted by CU Boulder

References available upon request.