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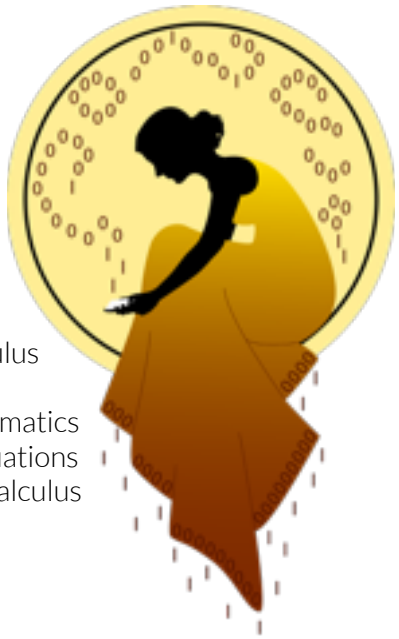
Sarah Elizabeth Rust



Education

BS in Computer Science — University of North Carolina at Chapel Hill
Minor in Mathematics — Class of 2016

Courses

Computer Science

Computer Graphics
Sound Simulation
Serious Games
Business of Games
Computational Photography
Computer Security
Software Engineering Lab
Algorithms
Files and Databases
Honors Operating Systems
Data Structures
Advanced Web Programming
Compilers
Computer Architecture
Digital Logic & Comp. Design
Models of Lang. and Comp.

Mathematics

Advanced Calculus
Linear Algebra
Discrete Mathematics
Differential Equations
Multivariable Calculus
Intro to Physics

Employment

Technical Lead on the Student Volunteer Subcommittee — 2015-2016
SIGGRAPH
- In charge of overhauling the volunteer system, creating an app for the volunteers and leaders to use during the conference to update schedules and send announcements, and in general helping the committee perform their duties

Platform Architecture Graphics Intern — 2015
Apple
- Developed an internal tool suite using Autodesk's FBX SDK
- Created a Metal app to demo advanced rendering techniques

Research Assistant — 2015
University of North Carolina at Chapel Hill
- IRB certified user study group testing benefits of sound propagation using UNC's ray-tracing based sound system
- In charge of the reverberation tests. Created the test and performed it on various participants
- Paper to be published describing our methods of testing reverberation and diffraction and their results

Teaching Assistant — 2014-2016
University of North Carolina at Chapel Hill
- (4 semesters) Intro course to Computer Science teaching programming practices through HTML, CSS, Javascript, and Excel for non-majors
  - Duties included grading assignments and tests, holding weekly recitations and office hours (or by appointment), and creating exams
- (1 semester) Fred Brooks' History of Computing course
  - Duties included grading students' papers and maintaining the course website and materials

Team Leader — 2015
SIGGRAPH
- In charge of Merchandise and Media, organizing student volunteers, and in general helping the Student Volunteer Subcommittee before the conference

Student Volunteer — 2013-2014
SIGGRAPH
- Assisted in operational duties and was a liaison for the technologists at E-Tech and the Art Gallery for the annual SIGGRAPH conference

Volunteer Tutor — 2013-2016
Computer Science Club
- Weekly computer science tutor sessions for all programming courses I've taken

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Skills

- Java, C, C++, HTML, CSS, Javascript, PHP, SQL, Verilog, Matlab, Objective-C, Metal, Python
- Unity, Adobe Illustrator, Adobe Photoshop, Mudbox, Maya, Blender

Additional Experience and Awards

Apple's WWDC Student Scholarship 2014
- Received a scholarship to attend WWDC by creating and submitting an iOS app

HackNC Marketing Chair 2014-2015
- Designed and implemented a marketing campaign for a hackathon at UNC for over 600 attendees

Hackathons
- MHacks • VTHacks • HackDuke • HackNC • PearlHacks • HeelHacks

ACM Programming Competition 2014-2015
- Worked in a team to solve problems using data structures and algorithms

Conferences
- Game Developer's Conference 2012
- Apple's WWDC 2014, 2015
- ACM SIGGRAPH 2009-2015
- Grace Hopper Conference 2015

Clubs
- Women in Computer Science (President 2015-2016, Vice-President 2014-2015)
- HatCH (hardware club)
- CS Club
- Cybersecurity Club

Projects

Mentored Research Project
- Creating and testing a multiplayer 3D audio game that teaches the visually impaired how sound can give clues about their environment

Blender Integration with OSVR
- Software Engineering Project with OSVR client: plug-in for Blender using my team's Python wrappers for OSVR's API to output to a VR HMD

Recursive Raytracer
- Computes intersections using Blinn-Phong shading in C++ and displays via OpenGL

Face Morphing
- Morphs two images to a common Delauney triangulation and blends the intermediate images together

Table-top Game Website
- Enables multi-user table-top gaming over a websocket. Features include chat, dice, a toybox, and stored board sessions with moveable pieces

Pong for Two
- Two-player pong written in C and another version in MIPS assembly

Single-cycle CPU
- Processor designed in Verilog hardware description language for a FPGA board that displayed on a monitor. Tested with a constantly animating graphic that can move around on the screen.

Chess
- MVC object-oriented chess board in Java with graphical interface