Bruno Li

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http://www.cs.utexas.edu/~tsornin/

EDUCATION

University of Texas at Austin August 2009 to May 2012
Major in Computer Science — Turing Scholars Honors Program
• GPA: 3.61/4.00
Related coursework:
Data Structures*; Artificial Intelligence; Software Engineering; Graphics†;
Digital Logic Design; Computer Architecture*; Operating Systems*;
Logic, Sets, and Functions*; Analysis of Programs*; Theory in Programming; Algorithms*;
Linear Algebra; Multivariable Calculus; Differential Equations
* - Honors; † - Graduate

SENIOR THESIS

Physically-based animation of plants August 2011 to present
Undergraduate Research/Thesis with Dr. Don Fussell
Modeling soft-body plants with wind, rain, and fire effects using Verlet particles and constraints using my physics engine (see below).

PERSONAL PROJECTS

"Umbrella" November 2009 to present
http://www.cs.utexas.edu/~tsornin/umbrella.html
Built a 2D physics engine in C++ with OpenGL and SDL, designed around three object types and arbitrary collision-type pair filtering. Implemented an extension to the sort-and-sweep algorithm to deal with collision groups.
• Rigid: rigid body type composed of convex shapes.
• Euler: dedicated particle type for inaccurate fast particles.
• Verlet: dedicated particle type for stable soft bodies.
Features: quadtree and sort-and-sweep broad phase; impulse-based collision response; rigid bodies with multiple convex shapes; dedicated particle types; user-specified collision groups; OpenGL rendering

SCHOOL PROJECTS

Software engineering Fall 2011
Project — Software Engineering
Completed assignments in Java and Python using Git version control and extensive unit and acceptance testing.

JOS exokernel Spring 2011
Project — Operating Systems
Implemented core functionalities of JOS operating system in C and x86, including boot-loader, virtual memory, environments, multi-threading, filesystems, network driver, and graphics driver.

MIPS processor Fall 2010
Final Project — Computer Systems and Architecture
Implemented a pipelined MIPS processor in Verilog.

Heuristic search Fall 2010
Project — Artificial Intelligence
Developed a heuristic for a web spider in Java.

Web crawler / search engine Fall 2009
Final Project — Algorithms and Data Structures
Designed and implemented a web crawler and search engine application in Java.

WORK

University of Texas at Austin September 2011 to present

Proctor (20 hours/week) — Algorithms and Data Structures

• Answered student questions and wrote scripts to automate grading of many programs (such as an image processor and a random text generator).

University of North Texas September 2008 to May 2009

Math/Physics Tutor (2 hours/week)

• Tutored students in calculus (single- and multi-variable) and calculus-based physics topics (mechanics, electricity and magnetism, thermodynamics, optics).

SKILLS

Programming		
• C	1 year	Implemented core pieces of JOS for Operating Systems at UT
• C++	3 years	Physics engine (see above)
• Java	5 years	Web Crawler for Data Structures at UT, various assignments
• OpenGL	1 year	Physics engine (see above)
• HTML/CSS/PHP	1 year	Designed/coded personal website; designed TAMS MAΘ website
• Python	2 months	Software Engineering at UT
Other Software		
• Photoshop	6 years	Web graphics, textures, t-shirt design, various other projects
• Blender/Yafray	1 year	3D modeling
Other Languages		
• Chinese	Bilingual	Mandarin, Shanghainese
• Spanish	4 years	
• Japanese	2 years	
Other Interests		
• Drawing/Sketching		http://tsornin.deviantart.com/ Qualified for state art competition (VASE) 2006, 2007; Wrote and drew a webcomic for several months; Designed t-shirts, websites, and various other projects
• Piano	15 years	
• Voice	3 years	
• Classical Music		
• Martial Arts		Kung Fu, Taekwondo
• Fencing		