Tianyu Cheng

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EDUCATION

UNIVERSITY OF TEXAS

B.S. in Computer Science
May 2016 | Austin, TX
College of Natural Science
Turing Scholars Program
Major GPA: 3.91 / 4.0

B.S. in Mathematics
May 2016 | Austin, TX
College of Natural Science
Major GPA: 4.00 / 4.0

COURSES

UNDERGRADUATE
Algorithm & Complexity
Artificial Intelligence
Programming Languages
Operating Systems
Computer Organization & Architecture
Data Management
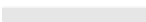Data Structure

GRADUATE
Computer Graphics

SKILLS

PROGRAMMING
C/C++
Java
C#
Python

WEB DEVELOPMENT
HTML/CSS
JavaScript
CoffeeScript
Node.js
Django

COMPUTER GRAPHICS
OpenGL
WebGL
GLSL

LINKS
Github: **tycheng**
Homepage: **tycheng.github.io**

EXPERIENCE

APPLE | GPU Architecture Validation Team
June 2015 – August 2015 | Austin, TX
- developed an internal server-side tool with Ruby on Rails for test automation
- worked on numerics validation for texture filtering
- developed a web front-end data analysis tool for data visualization

DIGITAL MEDIA INSTITUTE | Student Technician
June 2014 – December 2014 | Austin, TX
- worked on the back-end OOP design and implementation of an educational game with Unity and C#
- developed several third-party tools to facilitate game data management in Python, and provides a sanity check of the validity of the data
- refactored back-end codes to comply with MVC pattern

PROJECTS

RAY TRACER | Computer Graphics
- a multithreaded ray tracer based on Whitted model
- used KD-tree and SAH for ray-object intersection optimization
- supports glossiness and depth of field using distribution ray tracing

GAMEL | Scala DSL
- a game scripting DSL(domain-specific language) using Scala and Swing
- designed and implemented a set of syntax for basic game object manipulation
- attaches a demo of the classical game Snake using GameL

3D MODEL VIEWER | OpenGL GLSL
- a shader-based OpenGL program that renders 3D models of format PMD/PMX(Polygon Model Data/eXtend) with simple animation
- currently being ported to web platform using WebGL and CoffeeScript

ONLINE LINEAR ALGEBRA SOLVER | Python Django
- a web project aiming at teaching students linear algebra by example
- solve linear algebra problems and show the individual steps, including row reduction, matrix multiplication, inverse of matrices, etc

ONLINE LAW CASE MANAGER | Office Automation
- a Python/Karrigell web project for office automation in law office
- generates archives for law case records and store them in local database
- supports archive insertion, deletion and printing

ONLINE WEBSITE DESIGNER | UI & UX Design
- a Java/Struts web project for UI/UX design
- provides a user-friendly interface to customize websites by drag&drop
- CREDIT: This project owes the inspiration to online website editing tools, e.g. Weebly and Yola.