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: 3.92 / 4.0

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

COURSES

UNDERGRADUATE

Algorithm & Complexity (In Progress)
Artificial Intelligence (In Progress)
Programming Languages
Operating Systems
Computer Organization & Architecture
Data Management
Data Structure

GRADUATE

Computer Graphics (In Progress)

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 (INCOMING) | GPU Team

June 2015 – September 2015 | Austin, TX

- Assigned to be working with Apple GPU team.

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 multiple-threaded ray tracer based on Whitted model with reflection and refraction.
- 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 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 GRAPHICS ANIMATION | OpenGL GLSL

- A shader-based OpenGL program that renders animating MMD 3D models. It provides a basic scene manager and a MMD-based renderer for small graphics applications.
- Currently being ported to web platform using WebGL and CoffeeScript.

ONLINE LINEAR ALGEBRA SOLVER | Python Django

- Many high school students are getting ahead in Mathematics. This project aims to help students learn linear algebra by examples.
- Solve linear algebra problems and show the individual steps of how they are solved, including row reduction, matrix multiplication, inverse of matrices, etc.

ONLINE LAW CASE MANAGER | Office Automation

- Law cases management generally involves repetitive operation. This project aims to simplify the procedure.
- Implemented with Python, Karrigell and MySQL.
- Provides an easy-to-use UI for users to archive, modify and delete law case records. It also generates law case documents for printing.