

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

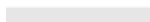



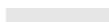
Computer Graphics (In Progress)

SKILLS

PROGRAMMING

C/C++ 
Java 
C# 
Python 

WEB DEVELOPMENT

HTML/CSS 
JavaScript 
CoffeeScript 
Node.js 
Django 

COMPUTER GRAPHICS

OpenGL 
WebGL 
GLSL 

LINKS

Github: [tycheng](https://github.com/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.