Tianyu Cheng

http://tycheng.github.io
tianyu.cheng@utexas.edu | Phone (512).517.1107

EDUCATION

UNIVERSITY OF TEXAS

M.S. in Computer Science
Dec 2017 | Austin, TX
College of Natural Science
Five Years BS/MS Integrated Program
Major GPA: 3.9 / 4.0

B.S. in Computer Science
May 2016 | Austin, TX
College of Natural Science
Turing Scholars Program
Major GPA: 3.9 / 4.0

COURSES

UNDERGRADUATE

Algorithm & Complexity
Computer Vision
Artificial Intelligence
Programming Languages
Operating Systems
Data Management
Data Structure

GRADUATE

Compilers
Computer Graphics
Autonomous Robots
Software Design

SKILLS

PROGRAMMING

- C/C++
- Java
- C#
- Python

WEB DEVELOPMENT

- HTML/CSS
- JavaScript
- Node.js
- Django

COMPUTER GRAPHICS

- OpenGL
- WebGL
- GLSL

LINKS

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

EXPERIENCE

APPLE | GPU Validation Team

June 2016 – August 2016 | Austin, TX

- developed an internal web front-end tool for performance visualization
- implemented and validated counters in performance model
- worked on tessellation numerics validation

APPLE | GPU Validation Team

June 2015 – August 2015 | Austin, TX

- developed an internal server-side tool with Ruby on Rails for test automation
- worked on texture filtering numerics validation
- 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 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.