

Tianyu Cheng

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EDUCATION

UNIVERSITY OF TEXAS

M.S. IN COMPUTER SCIENCE

May 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](https://github.com/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 | OPENGGL 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.