

# Daniel McCann

Graphics Programmer  
<https://github.com/mccann>

## EXPERIENCE

### **Bentley Systems, Exton PA** — *Software Engineering Intern*

May 2017 - August 2017

Transitioned to physically-based materials for an in-development rendering engine, backwards-compatible with OpenGL ES 2.0 and the standard used by Analytical Graphics, Inc.'s Cesium engine.

### **University of Pennsylvania, Philadelphia** — *Teaching Assistant, Multiple Classes*

May 2015 - PRESENT

CIS 566, Procedural Graphics, current: responsible for several lectures, homework basecode creation, grading, office hours.

CIS 110, Introductory Computer Science, 5 semesters: responsible for grading, weekly lectures in Fall and Spring semesters, daily lectures in Summer semester, office hours.

FNAR 235, Introductory and Advanced 3D Modelling, 3 semesters: responsible for teaching and tutoring 3D software design and artistic skills, and critique. Focus on Autodesk Maya, ZBrush, Mental Ray and Arnold Renderers, texturing tools.

## EDUCATION

### **University of Pennsylvania, Philadelphia** — *MSE, Computer Graphics + Games Tech.*

August 2017 - May 2018 Expected Graduation

### **University of Pennsylvania, Philadelphia** — *BSE, Digital Media Design*

August 2013 - May 2017

UPenn's DMD is an interdisciplinary major for programmers interested in animation, games, and computer graphics in general.

## PROJECTS

### **Project Marshmallow** — *Fall 2017*

A Vulkan implementation of the Siggraph 2017 "Nubis" paper for rendering atmospheric clouds in 60+FPS for games. The clouds are fully procedural, animated, photoreal, and cast shadows on objects in the scene.

### **Webgl 2 Teaching Framework** — *Spring 2018*

A deferred rendering framework made for personal projects, then adapted into a homework for UPenn's CIS 566 course to teach students about rendering pipelines in games.

### **Alizarin** — *Fall 2016*

A procedural dungeon crawler in Unreal Engine 4. Creates seamless 3D levels with ordered gameplay objectives. Aside from code, created modular 3D environment assets and character assets.

## SKILLS

**CPU Languages:** C++, Javascript/Typescript, Python, Java

**GPU API:** OpenGL & GLSL, Vulkan, CUDA

**Game Engines:** Unreal 4, Unity

### **Proprietary Graphics**

**Software:** Substance Designer, Substance Painter, ZBrush, Autodesk Maya, Photoshop

Shaders, Proceduralism, Strong artistic sense and communication skills.

### **Relevant Classes:**

- CIS 565 GPU programming & architecture
- CIS 700 procedural graphics
- CIS 560 physically based rendering
- CIS 568 game design practicum
- CIS 277 computer graphics