Christian Robles

+1(909)451-1716 · roblesch@usc.edu

https://blog.roblesch.page

EDUCATION

University of Southern California — Los Angeles, CA
Viterbi School of Engineering — May 2023
Master of Science, Computer Science — **GPA: 3.85**
Multimedia and Creative Technologies

- **Multimedia Systems Design,** End-to-end multimedia systems – content creation, compression, distribution.
- **Computer Graphics,** OpenGL, 2D and 3D transformations, Bezier Splines, rendering including ray tracing, shading and lighting.
- **3-D Graphics and Rendering,** Transformations, shading, lighting, rasterization and texturing for scenes of 3D models.
- **Analysis of Algorithms,** Fundamental techniques for efficient algorithm construction.

Arizona State University — August 2013 – May 2017
Ira A. Fulton Schools of Engineering
Bachelor of Science, Computer Science

TECHNICAL SKILLS

Languages: C++, Java, Python, R, Go
Tools/Frameworks/Patterns: OpenGL, Qt6, Blender, CMake, Git, Containers, CI/CD, Pipelines, Infrastructure-as-Code

WORK EXPERIENCE

Software Engineer II — July 2017 – July 2021
Microsoft, Cambridge, MA

- Shipped infrastructure-as-code, CI/CD pipelines, build systems, and test infrastructure targeting the Azure Cloud.
- Worked with top partners in Financial Services to transition critical build systems and infrastructure to Azure.
- Prototyped new products and extended data platforms with Azure services alongside partners in Transportation and Energy.
- Collaborated with Microsoft and Academic Data Scientists to design and implement feature engineering pipelines in Healthcare.

Summer Technology Analyst — Summer 2016
Goldman Sachs, New York, NY

- Worked with Cloud Infrastructure team to develop data pipelines and dashboards for private cloud-based endpoints.
- Enhanced visibility on patch and security compliance for over 85K cloud-based endpoints with Elasticsearch and Kibana.

PROJECTS

MaterialX OSL Shader Generator, 03/2022

- Console wrapper around *MaterialX* to generate OSL shader code from *.mtlx files. Demonstrated generated OSL shaders with Cycles in Blender and shared implementation as a blog post.

Multiple Importance Sampling, 12/2021 – 02/2022

- Read Eric Veach's 1997 thesis *Robust Monte Carlo Methods for Light Transport Simulation* and extended Peter Shirley's *Ray Tracing: The Rest Of Your Life* with Multiple Importance Sampling using the Balance Heuristic. Shared implementation and discussion of techniques as a blog post.

HyperVideo Media Player, 10/2021 – 12/2021

- End of term project for Multimedia Systems Engineering. Qt6 Applications for authoring and viewing HyperVideo files that allow users to create and modify links between videos with a custom video format.

Multimedia Style Transfer, 05/2020 – 07/2020

- Projects exploring style transfer of textures on 3D scans and viability of a real-time style transfer plugin for TouchDesigner. Presented internally at Microsoft and shared as a blog post.

Cystic Fibrosis Patient Clustering & Device Classifier Feature Pipelines, 09/2018 – 08/2019

- In partnership with Microsoft Data Scientists and Clinical Statisticians. Designed and implemented a data featurization pipeline for over 12 TB of medical signals in a black-box research environment with strict constraints on performance.

INTERESTS AND HOBBIES

Volunteering and Education, Taught AP Computer Science A to High Schoolers via the TEALS Program with Microsoft.
Physically Based Rendering, Read academic literature and create side projects to share on my personal blog.
Hiking and Rock Climbing, Passionate about indoor and outdoor bouldering and sport climbing.