Francis Ge

Software Engineer · Computer Graphics

fyg4273@gmail.com | kumorikuma.dev | ciel712 | francisge

Summary

I'm a quick learner that's flexible, and steps in to do what's needed. I value maintainability, and simplicity. I help my team stay organized, and understand what it means to prioritize. Thinking from the user perspective helps me make sure our product focuses on what matters, and ships with a high standard of quality. I enjoy tackling challenging algorithmic problems, especially when it comes to computer graphics, simulations, and complex systems. I also find fulfillment in sharing my knowledge and teaching others by breaking down complex topics.

Work Experience

Facebook, Inc.
Seattle, WA

Software Engineer, Computational Photography Team — *Nov. 2017 - Present*

- Currently developing new media formats for unreleased project
- Lead engineer for 3D Photos backend creation algorithm (C++, Python)
- Lead engineer on building support for 360 Photos inside new Facebook.com (WebGL, JS)
- Led team of 4 to design and develop a new interactive Rotating View product photo format for Facebook Marketplace, using consumer iPhone camera and leveraging ARKit's SLAM system to perform fast video stabilization centered on object (C++, Objective-C)
- Keynote Speaker for <*3D Photography at Facebook*> at LDV Vision Summit by LDV Capital (NYC, May 2019)
- Built and launched 3D Photos product on Facebook for iOS, Android, and Facebook.com, using depth images either captured from consumer smartphone devices or drawn by hand to generate 3D models with novel viewpoints (C++, Python, Obj-c, Java, ReactJS, PHP).
- Researched and prototyped methods for automatic video summarization (Python)

Microsoft Corporation
Redmond, WA

Software Engineer Intern, Microsoft Office Graphics Team — *June 2016 - Sep. 2016*

- Implemented SVG Filter rendering support and testing for Microsoft Office software suite (C++)

Computer Science Department at University of Washington
Seattle, WA

Computer Graphics Teaching Assistant — *Fall 2015, Sep. 2016 - June 2017*

- Received *Bob Bandes Award*, recognizing exceptional performance by students as teaching assistants in the Computer Science department.
- Built new 3D rendering engine for course projects to support modern graphics APIs (OpenGL 4.0), using Qt for powerful cross-platform UI (C++).
- Lectured on supplemental project details (e.g. shaders, graphics pipeline, raytracing), held office hours, graded homework and exams.

SMART Technologies
Seattle, WA

Software Developer Intern — *June 2015 - Sep. 2015*

- Built and shipped method for existing smart projector software to communicate with new smart whiteboard enterprise hardware solution.

Animation Research Labs at University of Washington
Seattle, WA

Undergraduate Researcher — *Jan. 2015 - May. 2015*

- Researched performance of facial expression recognition cameras (such as Intel Realsense) on computer animated faces (C#).

Seattle Biomedical Research Institute
Seattle, WA

Game Developer Intern — *Mar. 2014 - June 2014*

- Developed prototype 2D educational game in Unity C#. Implemented A* pathfinding, UI, and game logic.

Education

University of Washington
Washington, United States

B.S and M.S. in Computer Science — *Sep. 2012 - June 2017*

- **Relevant Projects:**
  - **Multiplayer Game (Unity C#) and Server (Java):** 3d top-down shooter game with custom networking based off of Valve's Source Engine. Implemented client prediction, server reconciliation, entity interpolation.
  - **HoloChess (Hololens / Unity C#):** Networked AR chess with 3d animated pieces from imported 360 video capture using custom Unity plugin. Implemented vertex animation with custom HLSL shaders.
- **Relevant Coursework:** Graphics, Operating Systems, Distributed Systems, Networks, Architecture, Embedded Systems, Computer Animation and Production in Maya, Machine Learning, Computer Vision, Augmented Reality Capstone (Hololens)

Skills

Languages C#, Java, Python, Javascript, C++, GLSL / HLSL, OpenGL, WebGL, HTML5 / CSS, PHP, C, Go, Verilog

Tools Unity 5, Qt, Mercurial, Git, Visual Studio, Android Studio, Maya, Arduino, RenderDoc, Linux