Qing Gu

514-993-7213
tsing.goo@gmail.com
http://tsing-gu.com

Experience

2016 July - Now	**INRO Software - Graphics Programmer** Working on CityPhi. Developed deferred rendering pipeline. Implemented SSAO, framebuffer recording and encoding, smooth camera interpolation, click selection and geofencing. Rewrote building system and ported product to Linux.
2017 May - Now	**Consultant** Cooperating with a team in Austria to develop a high resolution 3D scanner. Designed software architecture, interfaces, Implemented 3D registration, UI. Set up cross-platform building system and CI.
2016 Winter	3D Underwrold - A Structured-light 3D Scanner Implemented SLS 3D reconstructor with CUDA. Set up CI with Google Test and TravisCI.
2015 Fall	Master's Thesis: Welding Simulation with SPH Used SPH Simulation Involved multiphase fluid Achieved real-time fluid simulation with CUDA Rendered with OpenGL 4.3
2015 Fall	PRDP(Parallel Ramer–Douglas–Peucker algorithm) implementation with CUDA Applied PRDP algorithm, a signal matching algorithm, on UCR Time Series Classification Archive. Accelerated for about 100 times comparing to CPU implementation. Related publication: The Discriminative Power of Shape An Empirical Study in Time Series Matching
2014 Winter	Gait Authentication Project Collected data with MoCAP, Kinect and Stereo Cameras. Preformed Stereo Camera Calibration. Applied DTW(Dynamic Time Wrapping) and TDE(Time-Delay Embeddings) algorithms on collected data.
2014 & 2015	TA of COMP477: Animation for Computer Games Wrote assignment code bases and solutions. (Assignments are about skeleton animation and key frame interpolations). Gave lectures on assignments and exam preparations. Marked assignments.
2012 Spring	Chengdu University of Technology Worked collaboratively on a 3D anti-satellite missile simulation system. Rendered flame with particle system.

Education

2013-2016	Master of Computer Science, **Concordia University**, Montréal, QC 3D Graphics Lab Supervisor:Dr. Tiberiu Popa and Dr. Sudhir Mudur GPA: 3.78 Thesis: GPU based Real-time Welding Simulation with Smoothed-Particle Hydrodynamics
2009-2013	Bachelor of Software Engineering, **Chengdu University of Technology**, Chengdu, China

Personal Projects

- Leap Face Tracker* - Reconstruct face in 3D with Leap Motion and face tracker
- Leap Puppet* - Animate 3D characters with Leap Motion
- GL4Framework* - A modern OpenGL render
- Encryptout* - A GPG based password manager
- Laplacian mesh edition with rotation
- ICP mesh alignment

*Available on my Github(v3c70r)

Technical Skills

- Programming Languages:
  - Advanced experienced with C++ and CMake building system.
  - Experience with Python, C, Shell, Matlab/Octave, Java, Javascript, C#, PHP
- Knowing modern OpenGL APIs, rendering pipelines and shaders.
- Familiar with computer graphics algorithms.
- Familiar with 3D reconstruction algorithms and camera calibration.
- Experience with GPGPU programming using CUDA, GLSL and OpenGL.
- Good Math background, able to translate research papers to code.
- Good physics background, understand rigid body and fluid dynamics.
- Comfortable with Linux/Mac with GDB, GCC, Makefile, Cmake (on Linux and MSVC), Vim, etc.
- Also have experience with Microsoft Visual Studio.
- Experience with version control systems: Git, Subversion.
- Experience with documentation tools: LaTeX, Markdown and Doxygen.
- Experience with web front-end dev using Yeoman, Grunt and WebGL.
- Basic Modeling with Blender.
- Some experience with Android Studio.

Awards

2017	HackQC 2017, Coup de cœur
2013-2015	Concordia GSSP (Graduate Student Support Program)
2012 Winter	Honorable Mention, Interdisciplinary Contest in Modeling Worked collaboratively with other two team members on an NLP problem.
2011 Summer	3Rd Prize, Mathorcup Global Mathematical Modeling Challenge Implemented a captcha recognition tool with Python PIL image library and Matlab ANN library.
2012 Fall	Scholarship of Logistic Group
2012 Fall	Scholarship of Chengdu University of Technology
2011 Fall	Award of Merit, National Software Professional Design and Development Contest

Languages

Chinese:Mother tongue | English:Fluent | French:Intermediate |

Activities

- Member of Coursera GTC (Global Translator Community)
- Volunteer for 2013 Fortune Forum in Chengdu, China.
- Helped Richard Stallman with free video broadcasting on 2015 Concordia convocation