

## Wenxian Guo

Game Engine Developer in Tencent Games

email:wxguojlu@hotmail.com, github:<https://github.com/WXGopher>

### Education

**M.Sc. in Computer Science**, University of Saskatchewan, Canada, Jul. 2018  
Concentrations in high-performance scientific computing  
Advisor: Dr. Raymond Spiteri

**B.Sc. in Computational Mathematics**, Jilin University, China, Jul. 2015  
Major GPA: 85/100, ranking: 17%.

### Skillset

Languages:

C++, Python

Experience and knowledge:

**game engine development** Unreal Engine 4;  
**physically-based animation** anatomical modelling and continuum mechanics;  
**numerical analysis** numerical ODEs, numerical PDEs, and numerical linear algebra;  
**high-performance computing** programming on shared or distributed memory machines;  
**computer vision** image processing, camera calibration, and 3D reconstruction.

### Publications

*R. Spiteri, W. Guo, Efficient Partitioned Numerical Integrators for Myocardial Cell Models*

Paper in Elsevier Applied Mathematics and Computation

DOI: <https://doi.org/10.1016/j.amc.2019.124738>

*W. Guo, Efficient Cardiac Simulations Using the Runge-Kutta-Chebyshev Method*

Master thesis, <https://harvest.usask.ca/handle/10388/8346>

*F. Cooper, et al., Chaste: Cancer, Heart and Soft Tissue Environment*

Paper in Journal of Open Source Software

DOI: <https://doi.org/10.21105/joss.01848>

*D. Dinev, W. Guo, P. Kadlec, L. Kavan, Solving for muscle blending using data*

Paper in Elsevier Computers & Graphics

DOI: <https://doi.org/10.1016/j.cag.2020.09.005>

### Experience

**Game Engine Engineer in Technology Center, Morefun Studio Group**

Tencent Games, China

Apr.2020—Present

- Focus on research and implementation of advanced game engine technologies (primarily in Unreal Engine 4).

**Research Assistant in State Key Lab of CAD&CG**

Zhejiang University, China

Sep.2019—Mar.2020

- Worked on physically-based hair simulation (collaborating with Dr. Raymond (Yun) Fei from *Tencent America*);
- **Skills involved:** C++ programming, physically-based animation;
- **Advisor:** Dr. Youyi Zheng

### Research Assistant in Computer Graphics Lab

University of Utah, U.S.A.

Oct. 2018—Aug. 2019

- Involved in implementing algorithms to optimize and visualize personalized facial muscles from scanned data;
- Implemented an evaluator to quantify stereo camera calibration quality;
- **Skills involved:** C++ programming, physically-based anatomical modelling, stereo camera calibration, image processing;
- **Advisor:** Dr. Ladislav Kavan.

### Research Assistant in Core Computing Group

National Hydrology Research Centre Canada

Apr. 2018—Sep. 2018

- Benchmarked high-performance simulation toolkit using *Intel VTune* and offered improvement suggestions;
- **Skills involved** high-performance computing, C++, performance test;
- **Advisor:** Dr. Raymond Spiteri.

### Python Software Developer in PLM Software Group

Siemens Canada

Sep. 2017—Mar. 2018

- Improved and implemented new UI experience;
- Optimized regression test suite by implementing a monitor to guard the test;
- **Skills involved:** Python, regression test.

### Java Software Developer, (MITACS Internship)

Western Heritage Services, Inc. Canada

Aug. 2016—Jan. 2017

- Core developer of a commercial scheduling software;
- **Skills involved:** Java development;
- **Advisor:** Dr. Zhangbao (Michael) Ma.

### Research Assistant in Numerical Simulation Research Lab

University of Saskatchewan, Canada

Sep. 2015—Nov. 2017

- Discovered, implemented, and proved algorithms for more efficient time-integration of myocardial cell models;
- **Skills involved:** C++, numerical analysis, high-performance computing;
- **Advisor:** Dr. Raymond Spiteri.

### Teaching Assistant in Department of Computer Science

University of Saskatchewan, Canada

Sep. 2015—May. 2017

- Tutored several computer science courses: data structure and algorithms, mathematical logic, and artificial intelligence.

### Miscellaneous

- I'm a huge fan of computer-animated movies;
- I was one of the original organizers of GAMES: Graphics And Mixed Environment Seminar, the *largest* non-profit academic seminar in China that gathers graphics researchers to exchange ideas and foster research collaborations;
- I conducted writing the *2015 Jilin University Apply Book*, a book aiming at helping students to apply to graduate schools and study abroad;
- For over four years, I served as a BBS moderator for gter.net, the Chinese *largest* BBS helping students to prepare for English test and to apply to foreign graduate schools.
- For over three years, I served as an organizer and a presenter for the *interdisciplinary salon at the Jilin University*, a discussion group for students to exchange their knowledge and thoughts.