Wenxian Guo

Game Physics Engineer 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. Kadlecek, L. Kavan, Discovering Personalized Muscle Anatomy
Paper *submitted to* Elsevier Computers & Graphics

Experience

Game Physics Engineer in Game Engine 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).
- **Advisor**: Milo Yip (Senior Engineer)

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 aboard;
- 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.