RAYMOND YUN FEI

PH. D.

RESEARCH SCIENTIST
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ESSENTIAL SKILLS

Specified in **physics-based simulation** of complex phenomena, especially the **coupling** and **collisions** between them; broad knowledge in fields including GPU acceleration, computational geometry, 3D reconstruction, and sampling methods.

Experienced with both fast prototyping and industrial development involving millions of lines of code. Comprehensive understanding of **C/C++**, **Python**, **OpenGL/DirectX/Vulkan** and **CUDA/OpenCL** programming; ample experience with **deep learning** and **TensorFlow**; familiar with **JavaScript**, **HTML5**, **WebGL**, **Java**, **Assembly** and **C#.**

WORKING EXPERIENCE

Tencent America, Santa Monica, CA
Research Scientist, Sep. 2019 — Present

Pixar Animation Studios, Emeryville, CA
Research Intern, 2018 Summer

Weta Digital, Wellington, New Zealand
Simulation Intern, 2017 Summer

Adobe Research, Seattle, WA
Research Assistant, 2015 Summer

NVIDIA, Santa Clara, CA
Software Engineer, Intern, 2014 Summer

GE Healthcare, Beijing, China
Part-time Software Developer, Intern, 2012 Fall

Microsoft Research Asia, Beijing, China
Software Engineer, Intern, 2011 Summer

EDUCATION

Columbia University in the City of New York, New York, NY
Ph. D. in Computer Graphics, Department of Computer Science, Jul. 2019
Thesis: Multi-Scale Models to Simulate Interactions between Liquid and Thin Structures
Advisor: Eitan Grinspun, Changxi Zheng

Columbia University in the City of New York, New York, NY
M. Sc. in Department of Computer Science, Dec. 2014
Advisor: Changxi Zheng

Tsinghua University, Beijing, China
B. Eng. in School of Software, Jul. 2013
Thesis: Research on GPU Acceleration of Incompressible Smoothed Particle Hydrodynamics and Applications
Advisor: Bin Wang

REFEREED ARTICLES

A Multi-Scale Model for Coupling Strands with Shear-Dependent Liquid[1]
Yun (Raymond) Fei, Christopher Batty, Eitan Grinspun and Changxi Zheng.
ACM Transactions on Graphics (SIGGRAPH ASIA 2019), Volume 38 Issue 6, November 2019.
GitHub Repository: https://github.com/nepluno/creamystrand

Mechanics-Aware Modeling of Cloth Appearance[1]
Zahra Montezeri, Chang Xiao, Yun (Raymond) Fei, Changxi Zheng and Shuang Zhao.
IEEE Transactions on Visualization and Computer Graphics, pp. 1—14, 2019.

A Multi-Scale Model for Simulating Liquid-Fabric Interaction[1]
Yun (Raymond) Fei, Christopher Batty, Eitan Grinspun and Changxi Zheng.
ACM Transactions on Graphics (SIGGRAPH 2018), Volume 37 Issue 4, August 2018.
GitHub Repository: https://github.com/nepluno/libwetcloth

A Multi-Scale Model for Simulating Liquid-Hair Interaction[1]
Yun (Raymond) Fei, Henrique Maia, Christopher Batty, Changxi Zheng and Eitan Grinspun.
ACM Transactions on Graphics (SIGGRAPH 2017), Volume 36 Issue 4, July 2017.
GitHub Repository: https://github.com/nepluno/libWetHair

Interactive Acoustic Transfer Approximation for Modal Sound
Dingzeyu Li, Yun (Raymond) Fei, and Changxi Zheng.
ACM Transactions on Graphics (SIGGRAPH 2016), Volume 35 Issue 1, December 2015.

Computational Design of Metallophone Contact Sounds
Gaurav Bharaj, David Levin, James Tompkin, Yun Fei, Hanspeter Pfister, Wojciech Matusik, and Changxi Zheng.
ACM Transactions on Graphics (SIGGRAPH Asia 2015), 2015.

Parallelize L-BFGS-B on the GPU
Yun Fei, Guodong Rong, Bin Wang and Wenping Wang.
Computers & Graphics, pp. 1—9, Volume 40, May 2014.

Towards Photo Watercolorization with Artistic Verisimilitude
Miaoyi Wang, Bin Wang, Yun Fei, Kang-lai Qian and Wenping Wang.
IEEE Transactions on Visualization and Computer Graphics, pp. 1—10, Feb. 2014.

Bilateral Blue Noise Sampling
Jiating Chen, Xiaoyin Ge, Li-Yi Wei, Bin Wang, Yusu Wang, Huamin Wang, Yun Fei, Kang-lai Qian, Jun-hai Yong and Wenping Wang.
ACM Transactions on Graphics (SIGGRAPH Asia 2013), Volume 32 Issue 6, Nov. 2013.

Research on GPU Acceleration of Incompressible Smoothed Particle Hydrodynamics and Applications
Bachelor Thesis of Tsinghua University (in Chinese), pp. 1—68, 2013.

Point-Tessellated Voxelization
Yun Fei, Bin Wang, and Jiating Chen.
Proceedings of Graphics Interface 2012, pp. 9—18, 2012.

PROFESSIONAL SERVICES

- As reviewer for multiple academic conferences & journals, including SIGGRAPH, SIGGRAPH Asia, ACM Transactions on Graphics, Computer Animation & Virtual Worlds, Graphics Model, CAD/Graphics and Pacific Graphics.

TEACHING EXPERIENCE

Columbia University, New York, NY
Teaching Assistant, 2014—2018

- System maintenance and software development for *Physics-based Computer Animation* (COMS 4167), 2014—2018.
- Instruct students in *Computer Graphics* (COMS W4160), 2015.

Tsinghua University, Beijing, China
Teaching Assistant, 2012—2013

- In charge of the course The Fundamental of Computer Graphics, introduced both industrial and academic graphics techniques in video games and designed assignments about GPU programming.

HONORS AND AWARDS

- Teaching Assistant Fellowship, Columbia University, 2014—2015.
- Excellent Graduation Thesis in Tsinghua University ranked 1st in department, 2013.
- Winning Prize in NVIDIA CUDA Programming Contest, 2012.
- Student Research Competition Semi-finalist Star in ACM SIGGRAPH 2012.
- 2nd Scholarship in Tsinghua University, 2009.
- 2nd Prize in the Great Challenge Champion in Tsinghua University, 2009.