Xue Bin (Jason) Peng
Year 2, PhD in Computer Science

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EDUCATION/AWARDS

- **PhD in Computer Science**, *University of California, Berkeley*　　　2017–Present
  - NSERC Postgraduate Scholarship
  - Berkeley Fellowship For Graduate Study

- **MSc in Computer Science**, *University of British Columbia*　　　2015 –2017
  - Governor-General's Gold Medal (top of master's class across all faculties – 2000+ students)
  - NSERC Canada Graduate Scholarship Master's Award
  - Theodore E Arnold Fellowship
  - CS Merit Award

- **Computer Science Honours**, *University of British Columbia*　　　2010 – 2015
  - Governor-General's Silver Medal in Science (top of undergrad class in faculty of science)
  - Grade average: 95.6 %
  - Norman A M MacKenzie Scholarship
  - President's Entrance Scholarship
  - Trek Excellence Scholarship
  - Greer Family Scholarship
  - Charles and Jane Banks Scholarship
  - Marie Kendall Memorial Scholarship in Science
  - Computer Science Scholarship

- **School of Interactive Arts and Technology**, *Simon Fraser University*　　　2009 – 2010
  - Gordon M. Shrum Scholarship

PUBLICATIONS

Refereed Journals/Conferences

- **Xue Bin Peng,** Pieter Abbeel, Sergey Levine, and Michiel van de Panne. DeepMimic: Example-Guided Deep Reinforcement Learning of Physics-Based Character Skills. *ACM Transactions on Graphics (Proc. SIGGRAPH 2018)* 37, 4 (2018).

- **Xue Bin Peng,** Marcin Andrychowicz, Wojciech Zaremba, and Pieter Abbeel. Sim-to-Real Transfer of Robotic Control with Dynamics Randomization. *IEEE International Conference on Robotics and Automation (ICRA)*, (2018).

- **Xue Bin Peng,** Glen Berseth, KangKang Yin, and Michiel van de Panne. DeepLoco: Dynamic Locomotion Skills Using Hierarchical Deep Reinforcement Learning. *ACM Transactions on Graphics (Proc. SIGGRAPH 2017)* 36, 4 (2017).

- **Xue Bin Peng,** and Michiel van de Panne. Learning Locomotion Skills Using DeepRL: Does the Choice of Action Space Matter? *Proc. ACM SIGGRAPH / Eurographics Symposium on Computer Animation* (2017). Best student paper.

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Terrain-adaptive locomotion skills using deep reinforcement learning. *ACM Transactions on Graphics (Proc. SIGGRAPH 2016)* 35, 4 (2016).

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Dynamic Terrain Traversal Skills Using Reinforcement Learning. *ACM Transactions on Graphics (Proc. SIGGRAPH 2015)* 34, 4 (2015).

Posters and Abstracts
- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Learning Locomotion Skills Using DeepRL: Does the Choice of Action Space Matter? *NIPS Deep Reinforcement Learning Workshop*, (2016).

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Terrain-adaptive locomotion skills using deep reinforcement learning. *NIPS Deep Learning Symposium*, (2016).

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Dynamic Locomotion Across Variable Terrains Using Deep Reinforcement Learning. *Dynamic Walking*, (2016).

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Dynamic Locomotion Skills for Obstacle Sequences Using Reinforcement Learning. *Dynamic Walking*, (2015).

- **Xue Bin Peng,** Glen Berseth, and Michiel van de Panne. Learning Dynamic Locomotion Skills for Terrains with Obstacles. *Reinforcement Learning and Decision Making*, (2015).

WORK EXPERIENCE

Member of Technical Staff (Intern)*, OpenAI*   May – Aug, 2017
- Explored methods for transferring control policies from simulation to a physical robot

Research Assistant, *University of British Columbia*   2015 - 2017
- Developed methods to train motion control policies for physics-based character simulation

Graduate Teaching Assistant, *University of British Columbia*   Jan – April 2017
- Hosted office hours
- Wrote code for assignments
- Graded assignments and exams

Research Intern*, Adobe Research*   May – Aug, 2015
- Explored methods for physically-plausible motion control of simulated characters

Lab Associate (Intern)*, Disney Research Pittsburgh*   Jan – May, 2015
- Developed models of human gameplay strategies through imitation learning
- Instrumented game to collect player data

Undergraduate Teaching Assistant, *University of British Columbia*   2011 - 2014
- Directed labs and hosted office hours
- Wrote code for assignments
- Graded assignments and exams

Intern Software Developer*, Microsoft Studios*   May – Nov, 2013
- Developed real-time analytic approximation of area lights with different BRDFs
- Implemented clustered forward lighting
- Implemented environment map volumes and parallax correction

Co-op Rendering Engineer, *Capcom Vancouver*   Jan – Aug, 2012
- Designed and created various rendering features through HLSL and C++
- Designed a system for physically inspired image based lighting, utilizing real-time generation of dynamic environment maps
- Implemented subsurface scattering for skin, distance field text and decal rendering, vertex animation, deferred lights, HDR cubemap support for Maya, and a variety of post-effects

TECHNICAL SKILLS

Programming Languages :	**Software** :
- Most fluent: C++, Python, Matlab, - C#, HLSL/GLSL, Java, Haskell, Prolog	- Microsoft Visual Studio - Photoshop - Git - Perforce

PROJECTS

Deep Terrain RL *(2016):*
- Applied deep reinforcement learning to train policies that enable simulated characters to agilely traverse across irregular terrain
- Developed mixture model policy representation that enable specialization of sub-policies
- Implemented locomotion controllers
- Integrated Caffe deep learning framework
- Build parallel training framework to speed up training of neural networks

GPU Fluid Simulation *(2014)* :
- Developed a real-time smoke simulation using an Eulerian discretization
- Implemented vorticity confinement and GPU solid voxelization of meshes
- Added a real-time volumetric scattering with an isotropic model for smoke rendering

Soft Body Simulation *(2014)* :
- Implemented Fast Lattice Shape Matching for mesh deformation
- Created a CPU voxelizer to generate space deformation cages for meshes

Personal Rendering Projects *(2012)* :
- GPU 3D fractal raymarcher with distance estimators
- Implemented Preetham/Hosek physics-based sky model
- Created Crepuscular rays as a post effect

Fractal Flakes *(2011)* :
- Create an interactive program that generates various 2D fractals