Xue Bin (Jason) Peng

Year 3, 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 (~2000 students)
  - 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

- Anirudh Goyal, Shagun Sodhani, Jonathan Binas, **Xue Bin Peng**, Sergey Levine, and Yoshua Benjio. Reinforcement Learning with Competitive Ensembles of Information-Constrained Primitives. *International Conference on Learning Representations (ICLR)*, (2020).
- Farzad Abdolhosseini, Hung Yu Ling, Zhaoming Xie, **Xue Bin Peng**, and Michiel van de Panne. On Learning Symmetric Locomotion. *Motion, Interaction and Games (MIG)*, (2019).
- **Xue Bin Peng,** Michael Chang, Grace Zhang, Pieter Abbeel, Sergey Levine. MCP: Learning Composable Hierarchical Control with Multiplicative Compositional Policies. *Neural Information Processing Systems (NeurIPS)*, (2019).
- **Xue Bin Peng,** Angjoo Kanazawa, Sam Toyer, Pieter Abbeel, and Sergey Levine. Variational Discriminator Bottleneck: Improving Imitation Learning, Inverse RL, and GANs by Constraining Information Flow. *International Conference on Learning Representations (ICLR)*, (2019).
- **Xue Bin Peng,** Angjoo Kanazawa, Jitendra Malik, Pieter Abbeel, and Sergey Levine. SFV: Reinforcement Learning of Physical Skills from Videos. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia 2018)* 37, 6 (2018).

- **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).

Non-Refereed

- Aviral Kumar, **Xue Bin Peng,** and Sergey Levine. Reward-Conditioned Policies. *arXiv preprint arXiv: 1912.13465* (2019).
- **Xue Bin Peng,** Aviral Kumar, Grace Zhang, and Sergey Levine. Advantage-Weighted Regression: Simple and Scalable Off-Policy Reinforcement Learning. *arXiv preprint arXiv: 1910.00177* (2019).

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

Research Intern, *Google Brain* June, 2019 – Present

- Developed framework for learning locomotion skills from demonstrations for quadruped robots.

Graduate Student Instructor, *University of California, Berkeley* Jan – April 2019

- Taught tutorial sessions
- Hosted office hours
- Graded assignments and exams

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