Tianxin Tao

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Education

University of British Columbia   Vancouver, Canada
B. Applied Science in Mechanical Engineering, minor in Computer Science   *Sep. 2014 – May 2019*
- Average: 89.6%

University of British Columbia   Vancouver, Canada
Master in Computer Science   *Sep. 2019 – Present*
- Supervisor: Prof. Michiel van de Panne
- Average: 95.8%
- Expected Graduation: May, 2022

Publication

Evaluating Vision Transformer Methods for Deep Reinforcement Learning from Pixels
Tianxin Tao*, Daniele Reda*, Michiel van de Panne
(*: equal contribution)
Under Review

Learning to Get Up
Tianxin Tao, Matthew Wilson, Ruiyu Gou, Michiel van de Panne
ACM SIGGRAPH 2022

Style-ERD: Responsive and Coherent Online Motion Style Transfer
Tianxin Tao, Xiaohang Zhan, Zhongquan Chen, Michiel van de Panne
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022

Learning to Locomote: Understanding How Environment Design Matters for Deep Reinforcement Learning
Daniele Reda*, Tianxin Tao*, Michiel van de Panne
(*: Equal Contribution)
ACM SIGGRAPH Motion, Interaction and Games (MIG 2020)

Towards the Development of a Learning-Based Intention Detection Framework for Pushrim-Activated Power-Assisted Wheelchairs
Mahsa Khalili, Tianxin Tao, Ruolan Ye, Shuyong Xie, Huancheng Yang, H.F. Machiel Van der Loos, Jaimie Borisoff
2019 IEEE-RAS-EMBS International Conference on Rehabilitation Robotics (ICORR)

Experience

AI Engineer Intern   May 2021 – August 2021
2012 Lab (Central Media Institute), Huawei Technologies Co., Ltd.   *Shenzhen, China*
- Implemented rule-based motion stylization algorithm based on heuristics
- Re-implemented offline motion stylization algorithms published in SIGGRAPH
- Developed novel neural network architecture for online motion stylization based on LSTM

Research Assistant   Sep 2019 – Present
IMAGER Lab, University of British Columbia   *Vancouver, BC, Canada*

- Investigated the influence of self-supervised learning objectives with vision transformers on the reinforcement learning from pixels problem (ongoing project)
- Developed a multi-stage learning pipeline to train get-up motion controllers without motion capture data
- Studied the impact of various parameters in simulation for off-policy reinforcement learning
- Experimented with learning latent representation from multi-view imaginary by contrastive learning to better serve locomotion tasks in reinforcement learning
- Explored different choices of action space in reinforcement learning for locomotion tasks

Teaching Assistant   May 2019 – Dec 2020
University of British Columbia   *Vancouver, BC, Canada*
- Course instructed: CPSC 121(Models of Computation), CPSC 314(Computer Graphics), CPSC 425(Computer Vision)
- Prepared coding assignments for the courses
- Led labs and tutorial sections to help students better understand the course material

Technical Assistant   May 2018 – Aug 2018
Department of Forest Resources Management, University of British Columbia   *Vancouver, BC, Canada*
- Designed the user interface of the website to support the researchers
- Implemented the front-end interface in ReactJS
- Designed the structure of the database, and implemented user sign up, log in functions using Firebase

Volunteer

Student Volunteer   Jan 2020
ICML 2020   *Online*
- Organized and invigilated poster discussion on Zoom

Research Volunteer   May 2017 - August 2017
Industrial and Automation Laboratory, University of British Columbia   *Vancouver, BC, Canada*
- Implemented boustrophedon decomposition path planning algorithm
- Built Gazebo simulation to examine the performance of proposed path planning algorithm
- Programmed micro-controller to control the motor speed of a robotic boat

Awards & Scholarships

Graduate Teaching Assistant Award   May 2021
Computer Science, University of British Columbia
- Presented to graduate teaching assistants who have distinguished themselves by earning outstanding scores and feedback from students on teaching evaluations.

Faculty of Applied Science International Student Scholarship   December 2018
University of British Columbia
- Offered to continuing international students in the Faculty of Applied Science who demonstrate strong academic achievement, engagement in the Faculty, and the potential to make a scholarly contribution within their chosen field of study

Elizabeth and Leslie GOULD Scholarship in Engineering   November 2018
University of British Columbia
- Three scholarships offered to engineering students in the Faculty of Applied Science which are made on the recommendation of the Faculty

Undergraduate Student Academic Achievement Award   October 2017, November 2018
Mechanical Engineering, University of British Columbia

The Trek Excellence Scholarship   September 2015, September 2018
University of British Columbia
- Offered to students in the top 5% of their undergraduate year

Skills

Programming Languages: Python, JavaScript, MATLAB, C++
Developer Tools: PyTorch, Git, Mujoco, scikit-learn, Amazon Azure
Languages: Chinese, English