Tianhong Dai

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Education

Imperial College London — London, United Kingdom
- *Ph.D in Deep Reinforcement Learning - Biologically Inspired Computer Vision Group (BICV)* — *Oct. 2017 - April. 2022*
  Thesis Title: Exploration in Deep Reinforcement Learning

Imperial College London — London, United Kingdom
- *MSc in Communication and Signal Processing (Merit)* — *Oct. 2015 - Sep. 2016*
  Thesis Title: Human Detection and Identification Using RGB and Depth Images

University of Liverpool — Liverpool, United Kingdom
- *BEng in Electronic and Communication Engineering (First Class)* — *Oct. 2013 - Jun. 2015*
  Thesis Title: Design and Implementation of FPGA-based Fourier Synthesizer Kit

Xi'an Jiaotong Liverpool University — Suzhou, China
- *BEng in Electronic and Communication Engineering* — *Sep. 2011 - Jun. 2013*

Online Course

- **Data Structures and Algorithms (Udacity)** — *Dec. 2019*

Working Experience and Activities

- **Tencent AI Lab / Robotics X** — Shenzhen, China
  Research Intern in Deep Reinforcement Learning — *Mar. 2019 - Sep. 2019*
- **Alan Turing Institute** — London, United Kingdom
  Invited to give a Tutorial on Pytorch — *August. 2018*
- **Perkins Shibaura Engines (Wuxi) Co., Ltd** — Wuxi, China
  Engineering Intern — *July. 2014 - August. 2014*

Academic Projects

- **Hand Pose Estimation for Medical Diagnosis** — *May. 2018*
- **Deep Reinforcement learning for Robotic Arm Control** — *May. 2018*
- **Deep Reinforcement Learning for Axon Tracking** — *Feb. 2018*
- **Human Detection and Identification using RGB and Depth Images** — *Feb. 2016*
- **Design and Implementation of FPGA-based Fourier Synthesizer Kit** — *Sep. 2014*

Skills Summary

- **Programming Languages**: C, C++, Python, Verilog HDL, SQL, Matlab, HTML
- **Tools/Frameworks**: Pytorch, Tensorflow, OpenCV, Docker, Git, Latex

Publications

[1] Shafa Balaram, Kai Arulkumarana, Tianhong Dai, and Anil Anthony Bharath. A maximum entropy deep reinforcement learning neural tracker. In *International Workshop on Machine Learning in Medical Imaging*, 2019.

[2] Cher Bass, Tianhong Dai, Benjamin Billot, Kai Arulkumaran, Antonia Creswell, Claudia Clopath, Vincenzo De Paola, and Anil Anthony Bharath. Image synthesis with a convolutional capsule generative adversarial network. In *The 2nd International Conference on Medical Imaging with Deep Learning*, 2019.

[3] Tianhong Dai, Kai Arulkumaran, Samyakh Tukra, Feryal Behbahani, and Anil Anthony Bharath. Analysing deep reinforcement learning agents trained with domain randomisation. *arXiv preprint arXiv:1912.08324*, 2019.

[4] Tianhong Dai, Magda Dubois, Kai Arulkumaran, Jonathan Campbell, Cher Bass, Benjamin Billot, Fatmatulzehra Uslu, Vincenzo de Paola, Claudia Clopath, and Anil Anthony Bharath. Deep reinforcement learning for subpixel neural tracking. In *The 2nd International Conference on Medical Imaging with Deep Learning*, 2019.

[5] Yali Du, Lei Han, Meng Fang, Ji Liu, Tianhong Dai, and Dacheng Tao. Liir: Learning individual intrinsic reward in multi-agent reinforcement learning. In *Advances in Neural Information Processing Systems 33*. 2019.

[6] Tianrui Liu, Jun-Jie Huang, Tianhong Dai, Guangyu Ren, and Tania Stathaki. Gated multi-layer convolutional feature extraction network for robust pedestrian detection. *arXiv preprint arXiv:1910.11761*, 2019.