Christopher W. F. Parsonson

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Summary

5+ years experience in ML/AI/networking research and development. Proven success developing state-of-the-art algorithms, open-sourcing high-quality research code, and publishing, reviewing, and winning awards in top outlets such as AAAI, NeurIPS, ICML, JLT, and OFC. Demonstrated ability to apply AI/ML solutions to real-world problems.

Technical Skills

Python, MATLAB, PyTorch, TensorFlow, DGL, PyTorch Geometric, W&B, Hydra, TensorBoard, Ray, RLlib, Gym, Pandas, NumPy, SciPy, Scikit-learn, PySCIPOpt, CVXPY, PuLP, Jupyter, Neovim, VSCode, Git, Linux, tmux, Sphinx, Docker, LaTeX

Education

University College London (UCL), PhD **2019 — Present**

*Thesis: **'Computer Network Optimisation with Artificial Intelligence and Optics'**, EEE Dept., Optical Networks Group*

- Authored 10+ publications in leading AI/ML and networking outlets (AAAI, OFC, JLT, etc.)
- ICML outstanding reviewer award (top 10%), NeurIPS reviewer, UCL 3MT competition winner
- Developed state-of-the-art reinforcement learning/graph neural network/swarm/evolutionary algorithms
- Deployed open source software package for custom reproducible network traffic generation

University of Cambridge (Gonville & Caius College), MRes **2018 — 2019**

*Integrated Photonic & Electronic Systems Engineering, **Distinction***

- Projects in (1) 3D computational holography for VR & AR displays (2) signal optimisation with swarm algorithms

Imperial College London, MEng **2014 — 2018**

*Materials Science and Engineering, **First-Class Honours***

- Top 5% of class (out of 120 students), awarded Morgan Advanced Ceramics prize for academic excellence

Experience

Visiting Researcher, The Alan Turing Institute, London **2022**

- Developed graph neural network and reinforcement learning algorithm for partitioning distributed deep learning jobs, achieving $\sim 60\%$ higher cluster throughput than prior state-of-the-art. Paper under peer review

Research Scientist Intern, InstaDeep Ltd., London **2021 — 2022**

- Developed graph neural network and reinforcement learning algorithm to solve NP-hard mixed integer linear programming problems 3-5× faster than prior work, enabling practical application at scale
- One paper published in AAAI'23, one under peer review

ConceptionX Deep Tech Startup Programme, U.K. **2021 — 2022**

- Explored commercial potential of deep geometric learning in logistics and information security domains
- One of 16 teams selected (from 70+ initial groups) to pitch to 400+ investors and industry leaders at demo day

Lecturer & Teaching Assistant, UCL & UCL-Consultants, London **2019 — 2022**

- AI Masterclass for DSTL, Machine Learning MSc, Applied Machine Learning Systems, Programming & Control Systems, Cloud Data Centres & Edge Computing, Python Programming, Mathematical Modelling & Analysis
- Leadership roles included: Lecturing, examining, tutorial demonstrations & supervisions, course & exam design

Research Engineer Intern, VividQ Ltd., Cambridge **2018 — 2019**

- Developed and deployed method to expand 3D display size by 2× without compromising quality

Research Engineer Intern, Dyson Ltd., Bristol **2017**

- Worked in thermodynamics research team. Conceptualised and demonstrated method to increase heat sink efficiency by 50%. Allocated $20k budget to set up and manage new suppliers and contracted researchers
- Participated in 2017 Hackathon, taking third place

Engineers Without Borders Challenge Finalist, U.K. **2017**

- Competitive 20-week national competition to develop engineering solutions for Bambui, Cameroon
- Won entry out of 4,600+ applicants to finals where presented to 200+ engineers and 18 judges
- Finished 3^{rd}, placing in top 0.1% of applicants

Internships at Cambridge Nanosystems, Polygelco, and Ubisense **Pre-2017**