Yan Zhang

cyanogenoid@gmail.com • cyanogenoid.com
Cyanogenoid • Nationality: German

Education

PhD Machine Learning — Southampton, UK
University of Southampton — *2016–2019*

Thesis: *Learning to Represent and Predict Sets with Deep Neural Networks*
TL;DR: Deep neural nets with sets as input (set-to-vec) or output (vec-to-set).
4 first-author papers in **top-tier** Machine Learning conferences (NeurIPS and ICLR).

Publications

ICLR 2020 Yan Zhang, Jonathon Hare, Adam Prügel-Bennett. FSPool: Learning set representations with featurewise sort pooling. In *International Conference on Learning Representations*, 2020.

NeurIPS 2019 Yan Zhang, Jonathon Hare, Adam Prügel-Bennett. Deep Set Prediction Networks. In *Advances in Neural Information Processing Systems 32*, 2019.

ICLR 2019 Yan Zhang, Jonathon Hare, Adam Prügel-Bennett. Learning representations of sets through optimised permutations. In *International Conference on Learning Representations*, 2019.

ICLR 2018 Yan Zhang, Jonathon Hare, Adam Prügel-Bennett. Learning to count objects in natural images for visual question answering. In *International Conference on Learning Representations*, 2018.

BSc Computer Science: First Class Honours — Southampton, UK
University of Southampton — *2013–2016*

- **Top grades of the year** in Computer Science **for all three years**.
  Average mark: **89.75**.
- Participated in IEEEXtreme programming competitions (group of 3), placing 79th worldwide (2013) and 50th worldwide (2014) out of ~2000 teams.
- Prizes: Zepler Project Prize (Bachelor thesis mark above 90), ICL Prize, Netcraft Prize, BAE Systems Applied Intelligence Prize, Winton Capital Management Prize.

Experience

- Contributor to *Leela Chess Zero* project: the open-source initiative to replicate and improve on *AlphaZero* by *DeepMind*. Implemented state-of-the-art Deep Learning techniques and diagnostics in **PyTorch** and **TensorFlow** to improve neural network training. Implemented flatbuffers in the Leela engine (C++) for an improved data pipeline. Leela is now one of the top 2 chess engines in the world.
- Open-sourced **PyTorch** implementations of all my papers and several state-of-the-art Machine Learning papers, including data preparation, neural network training, evaluation, and visualisations.
- Teaching assistant for *Advanced Machine Learning* module at University of Southampton during PhD, helping students with their ML projects when they get stuck. Ran tutorials for new PhD students to get started with Deep Learning.
- Actively programmed in **Python** since 2012, always using **git**. Learning **Rust**. Used **Java** for various university projects, including a RoboCode bot that won the first-year Computer Science RoboCode tournament.