Feng-Ting Liao

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WORK EXPERIENCE

MediaTek Research Taipei, Taiwan

Senior Research Scientist Nov 2020 - Present

- Co-creator of Breeze and BreeXe, the state-of-art LLM in Traditional Chinese.
  - Contributed to the full cycle of LLM creation, including data collection/processing, pre-training, post-training, evaluation, marketing, and productization of Breeze and BreeXe.
  - Open-sourced TCEval, the first comprehensive language model benchmark in Traditional Chinese; RAD-Bench, the first benchmark on retrieval augmented dialogues; Generative Fusion Decoding, an algorithmic framework for shallow fusing speech recognition model and LLM without re-training.
  - Productised BreeXe through cloud API and on-premises deployment to the Traditional Chinese market.
- Project lead of deep reinforcement learning for floor planning in chip design.
  - Designed, prototyped, and delivered deep reinforcement learning agents based on graph neural network and Transformer to solve floor-planing in chip top design.
  - Coordinated cross-departmental effort for algorithm integration and tool evaluation on chip design cases; cross-institution effort for building shaping and routing tools for RL environments.
- Research publications in Large Language Model, Diffusion Models, Meta-Learning, Natural-Language-Processing, and Speech Recognition at conferences such as ICML, EACL, and ASRU.
- Mentor for interns on algorithm prototyping and research publications; coordinator of staff hiring, cross-departmental reading groups, and lab compute infrastructure.

Umbo Computer Vision Taipei, Taiwan

AI Research Engineer | Research and computer vision team Mar 2019 - Feb 2020

- Architected a vehicle detection API for realtime surveillance cameras with research and product teams; proposed and implemented algorithmic optimization that increased 350% service speed and reduced 90% service cost for Umbo cameras over AWS.

Burberry London, UK

Intern | Data science team Dec 2018

- Improved digital retail experience for 12M customers through designing and deploying a trending algorithm based on Mann-Whitney U test in production.

University of Oxford Oxford, UK

Postdoctoral Research Assistant | Department of Physics Jan - Dec 2018

DPhil Researcher | Department of Physics Oct 2013 - Jan 2018

- Contributed to the first result of the world's largest detector for direct detection of dark matter.
- Led the Oxford team in developing and delivering sensors worth ~£50K to LZ and the investigation into applying machine learning to dark matter research. Designed a state-of-the-art monitoring system for the LZ detector and collaborated with ~20 researchers in developing the detector's time projection chamber.

BACKGROUND & SKILLS

ML areas: Large Language Model, Deep Reinforcement Learning, Speech AI, Meta-Learning, Diffusion Models, Generative Models, NLP, Computer Vision

Programming skills: Python, C++, Shell (proficient); SQL (basic)

Technologies: PyTorch, JAX, CUDA, NumPy, Pandas, Docker, Kubernetes, Git, Jenkins, AWS, GCP, Tableau

EDUCATION

DPhil in Particle Physics, University of Oxford 2013 - 2018

B.Sc. in Electrophysics, National Chiao Tung University 2008 - 2012