

Tom Joy

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in thwjoy

🌐 <http://thwjoy.github.io/>

Employment History

- Aug 2022 – present 📌 **Research Scientist**, Five AI. *Object detectors, robustness, safety of AI*
- Mar 2021 – present 📌 **Co-founder and President**, GirlsWhoML. *Management, finance, charity*
- Jan 2022 – Apr 2022 📌 **Research Intern**, Meta. *Vision and language foundation models*
- Aug 2017 – Dec 2017 📌 **Engineer**, SLAMcore. *Robotics, visual-inertial simultaneous localisation and mapping*
- June 2016 – Sep 2016 📌 **Research Intern**, Fuel3D. *3D reconstruction, stereo-photogrammetry*
- June 2014 – Sep 2014 📌 **Software Intern**, Green Hills Software. *Embedded devices, IoT*

Education

- 2018 – 2023 📌 **Ph.D. University of Oxford** Thesis title: *Variational Autoencoders for Supervision, Calibration and Multimodal Learning.*
- 2013 – 2017 📌 **M.Eng. University of Oxford** Engineering Science.

Skills

- Coding 📌 Python, Pytorch etc, AWS, C++
- Misc. 📌 Academic research, maths, teaching, management, finance, charity governance

Miscellaneous Experience

Teaching and Access

- 2018-2021 📌 **Tutor**, Taught information engineering module to the 3rd year undergraduates.
- 2022-present 📌 **Improving access to Oxbridge**, Held mock Oxbridge interviews to students at Mosbourne Community Academy in London.

Research Publications

Journal Articles

- 1 **T. Joy**, A. Desmaison, T. Ajanthan, *et al.*, “Efficient relaxations for dense CRFs with sparse higher-order potentials,” *SIAM journal on imaging sciences*, vol. 12, no. 1, pp. 287–318, 2019.

Conference Proceedings

- 1 **T. Joy**, F. Pinto, S. Lim, P. H. S. Torr, and P. K. Dokania, “Sample-dependent adaptive temperature scaling for improved calibration,” in *AAAI Conference on Artificial Intelligence*, 2023.
- 2 K. Oksuz, **T. Joy**, and P. K. Dokania, “Towards building self-aware object detectors via reliable uncertainty quantification and calibration,” in *Conference on Computer Vision and Pattern Recognition*, 2023.
- 3 K. Oksuz, S. Kuzucu, **T. Joy**, and P. K. Dokania, “Mocae: Mixture of calibrated experts significantly improves object detection,” 2023.
- 4 **T. Joy**, Y. Shi, P. H. S. Torr, T. Rainforth, S. M. Schmon, and N. Siddharth, “Learning multimodal VAEs through mutual supervision,” in *International Conference on Learning Representations*, 2022.

- 5 **T. Joy**, S. M. Schmon, P. H. S. Torr, N. Siddharth, and T. Rainforth, “Capturing label characteristics in VAEs,” in *International Conference on Learning Representations*, 2021.
- 6 A. Tonioni, O. Rahn timer, **T. Joy**, L. D. Stefano, T. Ajanthan, and P. H. Torr, “Learning to adapt for stereo,” in *Conference on Computer Vision and Pattern Recognition*, 2019.

Patents

- 1 **T. Joy** and A. Larkins, “Patent gb2559977 - apparatus and methods for obtaining information about the face and eyes of a subject,” 2018.
- 2 **T. Joy** and A. Larkins, “Patent gb2559978 - using specular reflections to image and model a face including physical eyewear,” 2018.