Max Taylor-Davies

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Summary

I am a PhD student in **robotics** and **cognitive science**. My primary research interest is in **social learning**, and how it can be leveraged to create agents that learn more efficiently and adapt better to unfamiliar situations. I am also interested in **multi-agent learning** and **AI alignment**, among other things.

Education

- **University of Edinburgh** — Edinburgh, UK
  PhD, Centre for Doctoral Training in Robotics and Autonomous Systems — *Sep 2022 – ongoing*
- **Imperial College London** — London, UK
  MEng Molecular Bioengineering; 1st class honours — *Oct 2017 – Jul 2021*

Experience

- **UCL Visual Plasticity Lab** — London, UK
  Research Assistant — *Mar 2022 – Sep 2022*
  - **Visualstim**: Designed and built a piece of software to configure and display various visual stimuli to mice during imaging experiments. The software had a simple, intuitive GUI - suitable for experimentalists with no programming experience.
  - **Sync computer**: Built a custom arduino system for microsecond-precision synchronisation between two-photon microscope, stimulus computer, running wheel and various cameras.
- **PolyAI** — London, UK
  Software Engineer — *June 2020 – June 2021*
  - **Platform**: Worked on a no-code web platform that clients could use to design and provision their own custom domain-specific dialogue agents.
  - **Analytics**: Built an in-house analytics platform for monitoring and visualising the outputs and performance of various deployed conversational agents. Included the ability to step through recorded conversation transcripts labelled with the intents and entities detected by the agent, and flag errors for future training.
- **Mora Technologies** — London, UK
  Cofounder & CTO — *Mar 2020 – Aug 2022*
  - **Mora**: Designed and built Mora, a web platform for organising and streaming research talks and seminars. Mora was acquired in 2022 by Cassyni.
- **MedEngine** — Berlin, Germany
  Software Engineer / Research Engineer — *June 2018 – Oct 2019*
  - **Medflix**: Designed and built an in-house system for storing and cataloguing data from hospital trials of the MedEngine device and app. Included the ability to watch video of the patient synchronised to captured motion data. The system made it significantly easier for MedEngine data scientists to search, review and label trial data.
  - **Flytta app**: Worked on a cross-platform mobile app for Parkinson's disease sufferers to better understand and manage their symptoms. Researched algorithms for monitoring tremor severity from accelerometer and gyroscope data. Investigated the use of simple NLP methods for tracking patient mood from free-text diary entries.

Projects

- **MEng project**: Developed and implemented a novel information-theoretic algorithm for mapping the receptive fields of neurons in the visual system.
- **Undergrad group project**: Developed a GAN-based system to generate synthetic images of eczema-infected skin - improved the performance of a diagnostic classifier for at-home use.

Programming Skills

- **Languages**: Python, Golang, Typescript, MATLAB, R, SQL.