Max Taylor-Davies

maxtaylordavi.es | github

Education

Imperial College London

2017-2021 MEng Molecular Bioengineering (predicted 1st class)

Projects

- **Masters project** (ongoing): working to develop novel information-theoretic methods for receptive field mapping in the visual cortex and LGN
- **3rd year group research project**: worked to develop and train Generative Adversarial Networks (GANs) to synthesise realistic fake images of eczema-infected skin. The images were used to improve the performance of an automated eczema severity classifier designed for at-home use.
- **2nd year Engineering Design Project**: designed and fabricated a microfluidic "lab-on-chip" device to predict and monitor drug resistance in breast cancer patients from a few drops of blood.

Activities

- PR secretary / webmaster, Imperial College Big Band (2019-20)

  In this role, I am responsible for maintaining and increasing the public profile of the band and society. This involves designing posters, designing and building a new website, and marketing the band across various social media platforms.

- Social secretary, Imperial College Big Band (2018-19)

  Organised numerous succesful social events for the members of the society, and negotiated discounts and deals with various venues.

Technical Skills

- Backend web development in Go / Python (Flask)
- Frontend web development in React + Typescript
- Cross-platform mobile development in React Native
- Data mining / web scraping in Python
- Signal processing
- Deep learning and reinforcement learning (RNNs, CNNs, GANs, DQNs) in PyTorch, MATLAB
- Deploying software at scale with Docker, Kubernetes, CircleCI, Spinnaker

Work Experience

PolyAI

- October 2020 - ongoing **Software engineer**: Continuing work on monitoring systems started during internship, as well as working on improving platformization and reusability of natural language agents. Mostly Go.
- June - September 2020 **Software engineering intern**: worked on developing best-in-class systems for monitoring, visualising and understanding the activity, reasoning and performance of multiple deployed conversational AI agents *in real time* (Go, React, Typescript). Recieved a return offer.

Imperial College Business School

- October 2019 - June 2020 **Research assistant**: worked on mining + scraping large amounts of blockchain data for analysis as part of a research project (in python).

MedEngine GmbH

- June - October 2019 **Software engineer**: built, from scratch, a platform to allow MedEngine data scientists to easily view and label raw motion data collected from patient devices alongside video captured during hospital trials. This involved developing in-house video streaming and data visualisation tools in Go and React/Typescript. The platform removed a large amount of friction from the job of labelling data and validating analysis algorithms, and made the lives of data scientists easier.
- October 2018 - June 2019 **Researcher (data science / engineering)**: worked on the development of new models and techniques for classifying Parkinsonian tremor severity based on raw motion data from the iPhone's builtin sensors.
- June - October 2018 **Summer Intern (mobile development)**: worked on a mobile app for Parkinson's disease care using React Native. Met with Parkinson's disease patients to understand their needs, and then implemented features such as mood tracking, diary with voice input, medication scheduler.

Additional experience

- Won the sponsor prize at Imperial College HealthHack 2018