Tom Pollak

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EDUCATION

University of York 2023
BEng. Computer Science

- Weighted average: 77%

Lady Manners School 2020
A-Level

- Further Maths (A), Maths (A), Computer Science (A), Physics (A).

EXPERIENCE

Cisco Meraki June - August 2022
Software Engineer Intern - Camera Intelligence *London, UK*

- Worked on the attribute search project: designed and implemented an NLP based image search model which allows users to use a text box to search for any object in a video feed, e.g. "A man wearing a blue hat riding a bike"
- Used *OpenAI's CLIP* derivative *MoTIS* to encode images into vectors and *Spotify's Annoy library* to index the images.
- Extended the current on-camera motion detection pipeline to feed image "blobs" into the new CLIP model.
- Implemented in C++, using PyTorch and NCNN machine learning frameworks.
- Using my approach, a busy 10 minute video could be queried in 0.2 seconds – faster than most non-NLP models.
- Reference

PROJECTS

Automated Horse Betting Software December 2020 - July 2021
https://github.com/tom-pollak/each-way-matcher

- Discovers undervalued horses by the bookmaker in each-way betting.
- Exploits the idea that the bookmaker calculates the odds of a horse "placing" using only the win odds of the horse, without data from the other horses in the race.
- Uses an adapted Kelly Criterion strategy with Expected Growth to calculate the optimal stake.
- Uses Python, Pandas and Selenium to scrape the horse races, interacts with Betfair API to place bets.
- Runs headless on a Raspberry Pi as a scheduled cron job every day.

Poker Web Application April 2019 - July 2020
https://github.com/tom-pollak/web-poker

- Free live poker web app using Python, Django and a Postgres database.
- Users can create accounts and tables, play poker, and chat with other players.
- Implements web-sockets using Django Channels and Redis for real-time communication with the users.
- Deployed with Docker and Heroku.

SANS Institute August 2020
FOR500 Windows Forensic Analysis
https://www.sans.org/cyber-security-courses/windows-forensic-analysis

- Sponsored through my success in the Cyber Discovery programme.

Cyber Discovery September 2018 - July 2019

- Independently completed the Cyber Discovery programme, run by HM government.
- Selected as one of the top 500 (of 28,000) students to attend the Cyber Discovery Elite event in London.

SKILLS

Languages	Python, C++, Rust, Haskell, SQL, HTML.
Tools	Linux, NeoVim, Git, VSCode, JetBrains Suite, RegEx, SQLite, LaTeX.
Technologies	PyTorch, Django, Numpy, Pandas, Selenium, GitHub, Docker.