Thomas **Patterson**

SOFTWARE ENGINEER · COMPUTER SCIENTIST

☐ (+44) 7923 101529 | ✉ tp477@cam.ac.uk | ⬡ patterson-tom | ▯ thomas-patterson-3783a9199

Education

Cambridge University
COMPUTER SCIENCE

Girton College
Oct. 2019 - Present

- On track to graduate with a first class degree.

Howard of Effingham School
A LEVELS AND GCSES

Effingham, Surrey
Sep. 2012 - Jul. 2019

- Earned 4 A*s at A Level, in Computer Science, Maths, Further Maths and Physics, the highest possible result.
- At GCSE, achieved 11 A*s and 3 As (or equivalents).

Skills

Programming	Python, Java, C++
Web Technologies	HTML/JS/CSS, NodeJS, Angular, Typescript
DevOps	Git
Languages	English (Fluent), German (Intermediate)
Other	Excellent communication, organisational and presentation skills

Experience

Ocado Technology
SOFTWARE DEVELOPER (INTERN)

Hatfield, Hertfordshire
Jul. 2021 - Sep. 2021

- Had the exciting opportunity to work on Ocado's new autonomous mobility venture with Oxbotica.
- Helped the team to improve their workflow as they first started to use the Agile software methodology.
- Rapidly became familiar with several new, important tools such as Sprint Boot, Feign, Panda authentication...
- Wrote and gave clear and communicative presentations to not only my team members, but also my colleagues across the whole of Ocado Technology.

Iventis
SOFTWARE DEVELOPER (INTERN)

Lincoln, Lincolnshire
Jul. 2020 - Sep. 2020

- Quickly and effectively learnt new technologies such as Angular, Typescript and NodeJS.
- Created various complex new features, such as a new secure sign-in method using JWT and the ability to tag users in comments.
- Professionally worked in an Agile environment, taking an active role in standup, planning and review meetings.
- Solved major bugs in the codebase which had gone unfixed for several years.

Verint Systems
SOFTWARE DEVELOPER (WORK EXPERIENCE)

Weybridge, Surrey
Jul. 2018 - Jul. 2018

- Independently created a deobfuscation tool for internal use, which proved invaluable in debugging efforts.
- Excelled at a range of technical roles, ranging from QA testing to security to deployment.

Vineries Garden Centre
GARDEN CENTRE ASSISTANT

Effingham, Surrey
Aug. 2017 - Apr. 2020

- Displayed outstanding team working skills and composure in busy, high pressure work environments.
- Communicated professionally to both clients and colleagues, honing exceptional interpersonal skills.
- Successfully managed my time, studying for and excelling in A Levels, whilst working 9-10 hour shifts.

Extracurricular Activity

Advanced UCI-Compatible Chess Engine
DEVELOPER

Sep. 2020 - Present

- Developing a very strong chess AI using advanced C++ language techniques such as multithreading and overriding the default hash function for efficiency reasons.
- Efficiently researched and implemented advanced AI techniques such as quiescence search, transposition tables and zobrist hashing.
- Implemented the UCI (Universal Chess Interface) protocol, allowing the engine to communicate with and be used with any compatible chess GUI.

A plethora of other exciting personal projects

DEVELOPER   *Dec. 2019 - Present*

- Tool to analyse a photo of a sudoku grid, read in the current progress, and use backtracking to complete the rest.
- Lightweight, easy to use and fully customisable screen overlay, to aid the reading of on-screen text for people with dyslexia.
- Fun version of the classic snake game, which uses a webcam to detect the player's head movements, using this as input to control the snake.
- All of these projects and more can be found at github.com/patterson-tom

Advent of Code

PARTICIPANT   *Dec. 2017 - Present*

- Participated in an annual series of programming challenges, covering topics from applied number theory to implementing virtual machines or 3D pathfinding algorithms.
- Consistently and rapidly prototyped efficient solutions to each puzzle, learning new techniques year on year.

Machine Learning Online Course   *Coursera*

ENROLLEE   *Mar. 2018 - May. 2018*

- A 60 hour course taught by Andrew Ng from Stanford Univerity, via Coursera.
- Scored a perfect score of 100% in all programming and theory assignments.
- Gained knowledge of and practical experience with concepts such as neural networks and support vector machines, as well as techniques such as regularisation and cross validation.

CyberDiscovery Competition   *London*

GRAND FINALIST   *Nov. 2017 - Aug. 2018*

- A government-run, multi-stage cybersecurity competition, culminating in a 2 day bootcamp in London for only the most promising participants, with live CTF competitions and talks from experts.
- Excelled in all rounds, despite limited prior experience in the field, quickly learning new skills, and applying them in various problem solving scenarios.

Optical Character Recognition, Extended Project Qualification   *Effingham, Surrey*

STUDENT   *Jan. 2018 - Sep. 2018*

- Extensively researched and subsequently developed from scratch a successful Optical Character Recognition program, capable of reading large amounts of written printed text.
- Built and trained a neural network from scratch, using only NumPy as an external library, in order to practice and extend my machine learning knowledge.
- Awarded an A* grade, for both the final product and a report detailing the research and development process.