Samuel Appleby

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🔗 https://www.samuelappleby.com   in Samuel Appleby   ⌗ SamuelAppleby
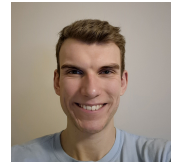
Experience

Teaching Assistant   *Newcastle-upon-Tyne, UK*
Newcastle University   *Sept 2022 – June 2025*

- During my PhD, I was a Teaching Assistant for the School of Computing at my university, demonstrating during practical classes and marking students' coursework.
- Modules: *Fundamentals of Computing*; *Computer Systems Design and Architectures*; *Software Systems Design and Implementation*; *Introducing Contemporary Topics in Computing* and *Computer Applications*.

Junior Network Programmer   *Liverpool, UK*
Lucid Games Ltd   *Apr 2020 – Dec 2020*

- Management and development of the online web service, complete with documentation.
- Designing the online matchmaking filtering system for a new PS5 title, *Destruction AllStars*.
- Design and integration of the web service communication with automated systems using Unreal Engine's Gauntlet automation framework.

Education

Newcastle University *PhD Computer Science*   *Jan 2022 – Feb 2026*

- Thesis: *On the Modelling of Temporal Data: Linear Logics in Event Logs and Deep Reinforcement Learning in Real-Time Simulations*.

Newcastle University *MSc Computer Game Engineering*   *Sep 2020 – Aug 2021*

- Dissertation: *Networking Techniques and Strategies to Benefit User Experience in Online Multiplayer Games*.
- **Grade:** Distinction

Newcastle University *BSc Computer Science*   *Sep 2017 – Aug 2020*

- Dissertation: *Develop an AI Agent Using Goal Oriented Action Planning that can Demonstrate Effective Solution Finding in Distinct World Environments*.
- **Grade:** 1:1

Publications

Articles

From Camera Image to Active Target Tracking: Modelling, Encoding and Metrical Analysis for Unmanned Underwater Vehicles   Apr 2025
Samuel Appleby, Giacomo Bergami, Graham Morgan 10.3390/ai6040071 ↗

Specification Mining over Temporal Data   Sep 2023
Giacomo Bergami, ***Samuel Appleby*** Graham Morgan 10.3390/computers12090185 ↗

Quickening Data-Aware Conformance Checking through Temporal Algebras   Mar 2023
Giacomo Bergami, ***Samuel Appleby***, Graham Morgan 10.3390/info14030173 ↗

Conference Proceedings

SWiMM DEEPeR: A Simulated Underwater Environment for Tracking Marine Mammals Using Deep Reinforcement Learning and BlueROV2   Dec 2023
Samuel Appleby, Kirsten Crane, Giacomo Bergami A. Stephen McGough 10.1109/CoG57401.2023.10333168 ↗

Enhancing Declarative Temporal Model Mining in Relational Databases: A Preliminary Study   May 2023
Samuel Appleby, Giacomo Bergami, Graham Morgan 10.1145/3589462.3589491 ↗

Running Temporal Logical Queries on the Relational Model   Sep 2022
Samuel Appleby, Giacomo Bergami, Graham Morgan 10.1145/3548785.3548786 ↗

Personal Projects

Arbiter

- Android application.
- An arbitrage engine for international sports markets inc. 8 countries and multiple markets.
- Multiple databases and querying inc. POSTGRESQL and SQLITE.
- Global API polling.
- Persistent storage for market opportunities.
- User preferences stored in secondary memory.
- Web-hosting with Microsoft Azure (web service and flexible POSTGRESQL server).
- Google Firebase Cloud messaging for app notifications.
- Web workers run jobs continuously in the order of seconds.

Pokémon Analyser Tool ↗

- PC Software.
- A Pokémon type analyser for game balancing (C#).
- Google API to communicate with online spreadsheet datasets for public use.
- Used for a community-developed Pokémon spin-off game.

Skills & Technologies

Expertise: Machine Learning, Reinforcement Learning, Deep Learning, Data Mining, Formal Verification, Probability Theory.

Debugging: Visual Studio, Visual Studio Code, Android Studio, PyCharm, IntelliJ, RStudio, TeXstudio.

Languages: Python, Kotlin, C#, C++, Java, C, R, Octave, JavaScript, LaTeX, HTML, CSS.

Databases: Postgre$_{SQL}$, SQLITE, My$_{SQL}$, MongoDB.

Source Control: Git, Perforce, Jenkins.

Web Tech: Google Firebase, Microsoft Azure, Node.js, Postman.

Game Engines: Unity, Unreal.

Achievements & Certification

Process Mining: Data Science in Action ↗ Eindhoven University of Technology Prof. Wil van der Aalst	*Feb 2023 – May 2023*
Machine Learning ↗ Stanford University Prof. Andrew Ng	*Mar 2022 – July 2022*
Philip Merlin Prize for Best Dissertation by an MSc Student in the School of Computing Newcastle University	*Sep 2020 – Aug 2021*

References

Available on Request.