Mark Warren

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Systems-Focused Developer leveraging a First Class Honours in AI and Robotics with a deep foundation in C++, C#, Python, and JavaScript. Currently augmenting technical expertise through an MSc in Games Computing, focusing on Graphics Programming and Game Systems Engineering. My experience includes engineering tools that yielded a 25% efficiency gain in data processing, demonstrating a passion for optimisation and creating efficient technical solutions. I am a highly self-directed individual and problem solver, eager to contribute software engineering skills to a bespoke engine environment.

Technical Skills

Languages: C++, C#, Python, JavaScript, TypeScript, GML
Engines & Graphics: Unreal Engine 5, GameMaker, Unity, OpenGL/Direct X, Blender
Tools: Git, Docker, Jenkins, Agile (Scrum, Kanban), Fusion360
Web & Cloud: Node.js, Angular, React, AWS, MongoDB, SQL

Projects

• **Abyssal Heart** (Unity) Programmer and Project co-ordinator for a Side-scroller utilizing a novel bioluminescence feature for dynamic light/dark scene switching and puzzle mechanics. Awarded Best Art at GDS Welcome Jam 2025.
• **Life Is An Opportunity** (GameMaker) Engineered a 2D RPG framework in GML within a 72-hour constraint. Developed a custom state-driven dialogue system and optimized level-loading through object-based instantiation.
• **NoxPy** (Python) Developed a strategic computer game, implemented a Minimax algorithm to create challenging and adversarial AI decision-making.
• **Charlotte** (C++) Designed and built an autonomous robot using VEX, Sonar, and Arduino for 2D navigation and metal detection, demonstrating core robotic programming and C++ debugging skills.
• **MP3 Head** A collaborative project involving Blender and Fusion360 for 3D modelling and 3D printing to create a unique MP3 player casing.

Work Experience

Student Demonstrator | University of Staffordshire | October 2025 to Present
• Debugged and resolved student code errors in C++, C#, and Python modules, translating complex bugs into understandable technical concepts to reduce lab time bottlenecks.
• Honed technical communication skills by demonstrating and explaining core programming concepts and systems logic, leading technical workshops, and contributing to knowledge transfer.
• Led organizational efforts for study groups and facilitated academic guidance, demonstrating teamwork and leadership applicable to Agile/Scrum project management.

Back End Developer Intern | Patternologie Studio **|** May 2025 to July 2025
• Engineered and implemented server-side logic in JavaScript to support core application features.
• Contributed to the development and maintenance of the application's GUI, optimising components for performance and usability.
• Actively participated in Agile ceremonies to identify technical blockers and propose effective solutions, ensuring the project remained on schedule.
• Conducted rigorous testing to identify and resolve bugs before deployment, ensuring high application stability and reliability.

Software Developer Intern | Airbus Helicopters **|** Oct 2021 to June 2022
• Engineered and automated a data processing tool by converting a Visual Basic program to a JavaScript Google Spreadsheet, parsing NATO documents and achieving a 25% reduction in processing time.
• Developed aircraft system tools using C++ and Python on Raspberry Pi and Ubuntu Linux.
• Contributed to AI research initiatives focused on obstacle detection algorithms.
• Proactively addressed technical challenges within a small team of four using Agile methodologies.

Education

MSc Games Computing | University of Staffordshire | Anticipated Aug 2026
• **Graphics Programming:** Developed advanced real-time rendering solutions using graphical APIs. Implemented skeletal animation, modern reflectance models and custom lighting shaders.
• **Computer Science Applications for Games:** Solving complex algorithmic problems specific to games engines, focusing on the use of Artificial Intelligence to enhance game mechanics.
• **Advanced Prototyping:** Engineering a series of rapid, portfolio-ready technical demos using C++ and C# to solve design challenges and refine "game-feel".
• **Project Management:** Applying Agile/Scrum methodologies to design and create technical projects through refined research. Ensuring milestone delivery via Forum submissions.

BSc (Hons) AI and Robotics | University of Staffordshire | Sept 2018 to July 2024
First Class Honours
Awards: Computing Department Prize (Best Overall Performance); Star Mentor Award.
• **AI for Computer Games:** Explored game-specific AI techniques, including navigation, motion and neural networks and implemented AI solutions for game environments.
• **Robotic Programming & Vision:** Advanced knowledge of micro-controllers and embedded systems. Developed real-time BIOS-style monitors and programmed robotic vision systems for autonomous navigation.
• **Commercial Computing:** Contributed within an Agile team to deliver a bespoke software solution for a third-party client, managing the full development lifecycle.
• **Final Year Project:** Conducted extensive primary research and technical modelling to create a documented software artefact and solution to a complex technical problem.

BTEC ND IT Practitioners (Software Development) | York College | Sept 2007 to July 2009

Additional Experience

LivedX Research Participant | Staffordshire University Pedagogic Practice
Feb 2024 to Mar 2024
Participated in the pilot testing of the LivedX AI platform along with roughly 20 participants, documenting lived experiences to train the AI in recognising UK student assets and aligning them with
graduate attributes. The program was for the University of Colorado's LivedX AI platform at Staffordshire University, adapting a US-developed system for UK student integration.
• Contributed up to 5 times a week with personal education experiences to train the AI platform.
• Documented and reflected on lived experiences, assisting in the alignment with graduate attributes.
• Provided usability feedback, enhancing platform adaptation and UI for UK students.

Volunteer STEM Ambassador and Mentor | Staffordshire University
Oct 2019 to Dec 2020
• Mentored students by providing academic and personal guidance, building rapport within the university community.
• Developed interpersonal and communication skills while assisting with the First Tech Challenge UK Robots competition.
• Demonstrated leadership by organising study groups and facilitating technical workshops.

Interests

• Video Games, Graphics, Blender.
• Energy efficiency, Design, Engineering.
• Motorcycles, Lacrosse, Cosplay.
• Outdoor Photography, Watching Movies/TV Shows, Reading works of Fiction.