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| CONTACT | 112A Walton St<br>Oxford<br>Oxon<br>OX2 6AJ | Mobile: (+44) 7835 108654<br>Email: <a href="mailto:jtbayne@gmail.com">jtbayne@gmail.com</a><br>Web: <a href="https://jamiebayne.co.uk">https://jamiebayne.co.uk</a><br>GitHub: <a href="https://github.com/qualiaa">https://github.com/qualiaa</a> |
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PROFILE I am a computer vision engineer with research experience and a strong grasp of mathematics. My professional interests include machine learning, high-performance computing, and physics simulation. I have four years' experience implementing neural networks, nine years' experience programming, and have been developing video games in my spare time since 2011.

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| EMPLOYMENT | <p><b>Computer Vision and ML Engineer</b>, DYNIMUM ROBOT <span style="float: right;"><i>January 2019 to present</i></span></p> <ul style="list-style-type: none"> <li>• Developed a highly parallel cloud pipeline to combine and analyse data sequences from an autonomous sensor array, generating insights for customers.</li> <li>• Evaluated, trained and modified existing neural network architectures (supervised and semi-supervised object detectors, semantic segmentation, instance-counting networks).</li> <li>• Developed web-app for in-house image-labelling tailored to problem domain.</li> <li>• Refactored C++ ROS camera drivers to improve fault-tolerance.</li> <li>• Worked with CTO to instigate improved CI/CD, testing and development practices.</li> </ul> |
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| TEACHING ASSISTANT | <p><b>Teaching Assistant</b>, UNIVERSITY OF WARWICK <span style="float: right;"><i>2015 to 2018</i></span></p> <ul style="list-style-type: none"> <li>• Taught modules: <i>Computer Graphics &amp; Mathematics for Computer Scientists II &amp; Principles of Programming Languages &amp; Logic and Verification &amp; Formal Systems Development &amp; Programming for Computer Scientists</i></li> </ul> |
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| EDUCATION | <p>UNIVERSITY OF WARWICK, Coventry</p> <p><b>PhD Computer Science (did not complete)</b> <span style="float: right;"><i>2015 to 2018</i></span><br/>Topic: Optimising Vision Systems for Autonomous Vehicles.</p> <p><b>MSc Computer Science Distinction</b> <span style="float: right;"><i>2014 to 2015</i></span><br/>Dissertation: Floating Point Optimisation of Particle-in-Cell Simulation.</p> <p><b>BSc Physics 2:1</b> <span style="float: right;"><i>2011 to 2014</i></span></p> |
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| TECHNICAL SKILLS | <p>Programming:</p> <ul style="list-style-type: none"> <li>• Proficient in C++, Python, Shell, Haskell, C, Scheme</li> <li>• Experience with JavaScript, Lua, Perl, C#, Haxe, and others</li> </ul> <p>Notable Libraries and Frameworks:</p> <ul style="list-style-type: none"> <li>• TensorFlow, PyTorch, CUDA, OpenGL 4, Boost, OpenMPI, ROS, Django</li> </ul> <p>Other:</p> <ul style="list-style-type: none"> <li>• Docker, GCP, AWS, Linux (9 years), formal specification, Arduino</li> </ul> |
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| PERSONAL PROJECTS | <p><b>Over 40 Game Projects</b> <span style="float: right;"><i>2011 to present</i></span></p> <ul style="list-style-type: none"> <li>• Developed in a wide range of languages including C++, Haxe, Lua and ActionScript, alone and in teams of up to six people.</li> <li>• Portfolio: <a href="https://jamiebayne.co.uk/games">https://jamiebayne.co.uk/games</a>.</li> </ul> |
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- Pico3D** (<https://github.com/qualiaa/Pico3D>) 2017
- A 3D renderer written in Lua for the PICO-8 virtual console.
- Tank Engine** (<https://github.com/tank-dev/tank>) 2013 to 2015
- Designed and implemented cross-platform 2D game engine in modern C++.
  - Worked in team of three as architect and lead programmer.
- Personal Blog** (<https://github.com/qualiaa/blog>) 2018 to present
- Dynamic Markdown → HTML with Django.

ORGANISATIONS **Warwick Game Design Society**

- Secretary, Equal Opportunities Officer and other roles 2012 to 2017
- Created new society website, branding and publicity, safe spaces policy.
  - Organised and competed in hackathons including inter-university and international events.
  - Taught C++ and game development workshops.
  - Delivered talks on accessible design practice and music production.

**Next Generation Programmers (NGP)** June 2016 to August 2016

NGP was a student-led initiative to run a ten-day programming course for 50 children in rural Kazakhstan aged 12–15. I joined the project as one of four tutors, and took on most technical responsibilities.

**STEM Ambassadors** 2016 to 2018

As a STEM Ambassador, I provided teaching support for extra-curricular STEM activities for secondary and sixth-form students in and around Coventry.

OTHER INTERESTS Writing, music composition, literature, economics, philosophy, teaching

REFERENCES Available upon request