

# Joseph Richards

## Curriculum Vitae

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### Profile

I am a recent graduate with a first-class degree with honours in Computer Games Development from the University of Central Lancashire which is accredited by the British Computer Society (BCS). I am looking for a graduate position which will allow me to use and develop my analytical and problem-solving skills. I have worked on many projects throughout my degree both independently and as part of a team.

My final year project involved the development of a physics and collision detection engine in C++ which I produced from first principles. This brought together my computing and coding skills and my interest in physics to create a program that was able to respond to inputs from the user to provide a realistic 3D visualisation of impacts and collisions of objects, which I have continued to develop after my degree.

### Objective

Having successfully completed a BSc (Hons) in Computer Games Development, I am now looking to enter the software development industry as a Graduate Software Engineer and am keen to build upon my knowledge and team working skills I developed during my degree, and using these in the workplace.

### Education and Qualifications

- 2020 - 2024 **Computer Games Development BSc(Hons)**, *University of Central Lancashire, Preston, First Class*  
Final Year Project: Development of a Physics and Collision Detection Game Engine
- 2016 - 2018 **A Level Computer Science (Grade B), Physics (Grade B) and Mathematics (Grade B)**, *Runshaw College, Leyland, BBB*
- 2011 - 2016 **GCSEs**, *Hutton C of E Grammar School, Hutton, 9 GCSEs including Maths and English*

## Work Experience

Before my degree I was involved in several projects. The first was a 1-month internship where I worked with a research team at the University of Central Lancashire. This involved dealing with a large set of data and categorising it into a spreadsheet and importing it into MATLAB. This allowed me to process the data using a bespoke program developed at Liverpool John Moore's University which produced a visual representation of the differences between two data sets using a technique similar to multiple t-tests to produce a difference graph to determine if significant differences were present across a data time series.

As a result of the success of this internship and my aptitude with datasets I was asked to help with a program to speed up the analysis time for research data from Inertial Measurement Units and Electromyography (muscle activity) which I programmed in python. This allowed a large dataset from a large number of individuals to be grouped and appropriate headers added to allow the data to be exported from one commercially available software program "Neuromap Explorer" (Delsys Inc., MA, USA) and to be imported into another software program Visual 3D (HAS Motion, Kingston, CA) which speeded up analysis time from weeks to days for the research team. This program has now helped several research teams using Neuromap Explorer in the UK and overseas. Recently I have rewritten this program in C# using .Net core and expanded its features to include the upsampling of data from different sensors collected at different sample rates to be collated and analysed together within Visual 3D.

I was subsequently approached by Delsys Europe to help the development of their inventory. To achieve this, I developed a Microsoft PowerApps program to help with ordering and the highlighting when stocks of certain products were low. This project involved learning what the client needed and what level of documentation and instruction the administration staff required to use the program. This was a steep learning curve but allowed me to appreciate the importance of documentation as well as software.

I am currently working on a project in collaboration with the University of Lancashire using advance sensor technology to control drones using gestures to help individuals with motor control challenges gain finer motor controls. I am using Avanti Sensors (Delsys Inc, MA, USA) to be able to stream IMU (Inertia Measurement Units) data to control drones. Additionally, I have worked as a Consultant to the Department of Physical Therapy with the University of Tennessee to create a program to handle data from Laser Doppler to assess spinal blood flow.

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## Key Skills

Programming Languages: C++, C#, HLSL, Python, Java, HTML/CSS, Unreal Engine 5 (C++)

Analytical Skills: I have been able to work on complex problems in my degree and am able to break these down into smaller components to better analyse how they need to work and integrate with one another.

Research Skills: During my degree I developed a physics and collision detection engine, I had to research how to simulate different physical properties and the use of computational mathematics such as numerical integration.

Teamwork Skills: I have worked in teams during my degree, mostly using an agile framework with weekly sprints. As well as making use of Git version control.

Communication Skills: Throughout my degree and work experience I've been able to confidently communicate with people of different levels of understanding using both written and verbal communication. I have learnt to write professional reports and documentation concisely and accurately as well as using Unified Modeling Language (UML) to show system interactions.

Software: Microsoft 365 (Word, PowerPoint, Excel, Etc.), L<sup>A</sup>T<sub>E</sub>X

Additional Information

- BSC Membership Professional Member of the BCS (British Computer Society)
- Basic GDPR Training Completed basic training in GDPR [2024]
- POWAR Member of POWAR a Council for Children and Young People with Special Educational Needs (SEN), which was funded by Lancashire Country Council. [2012 - 2016]
- PULSE Member of PULSE, Lancashire's Children and Young People's Health and Wellbeing Board [2013 - 2016]
- Diana Award Awarded the Diana Award for campaigning work with Barnardo's and PULSE [2014]
- Community Engagement Award As part of POWAR was awarded Celebrate Youths Community Engagement Award [2014]
- Special Achievement Award Short-listed for the South Ribble Special achievement award for my work with Barnardo's and PULSE [2014]

Interests

- Bouldering I regularly go bouldering with friends.
- Dodgeball I was a part of the university dodgeball team and competed against other university teams.

References

Available on request