

CAREER OPPORTUNITY

The Council for Scientific and Industrial Research (CSIR) is a leading scientific and technology research organisation that research, develops, localises and diffuses technologies to accelerate socio-economic prosperity in South Africa. The organisation's work contributes to industrial development and supports a capable state.

Senior Developer: 3-Dimensional (3D) Game Development

About the job:

The CSIR has a vacancy for a **Software Developer: 3D Game Development** in the Emerging Digital Technologies for fourth Industrial Revolution (EDT4IR) Research Centre within the Next Generation Enterprises and Institutions Cluster. The incumbent will be responsible for researching, designing and implementing Augmented, Mixed, and Virtual Reality technology to deliver innovative, high-impact solutions to government and industry stakeholders. S/He will have the opportunity to work with cutting edge Extended Reality (XR) hardware and software and explore XR integrations with other 4IR technologies. This position is based in Pretoria.

For more information about the cluster and the centre, please visit <https://www.csir.co.za/nextgen-enterprises-and-institutions> and <https://www.csir.co.za/emerging-digital-technologies-4ir-research-centre> respectively.

Key responsibilities:

- Conceptualise, design and prototype game concepts, mechanics, leader board, inventory systems, systems and technical requirements for Extended Reality (XR) solutions using C#, Python, HTML or JavaScript;
- Generate and contribute towards science engineering and technology (SET) activity targets and outputs (reports, guidelines, system requirements, peer-reviewed publications, technology, and software packages, etc.);
- Create and maintain the games codebase, ensure code quality, performance, and modularity;
- Optimize game performance, including graphics rendering, memory management, and network synchronization;
- Conduct thorough testing and debugging of the game, identify and resolve defects and gameplay issues;
- Implement game functionality, including player controls, artificial intelligence, physics and audio
- Understand and interpret client requirements to contribute to user requirement analysis and/or well-articulated project proposals;
- Keep up to date on emerging trends in XR Technology in relation to new approaches, tools, methods, or frameworks;
- Participate in internal task teams or committees in relevant domains;
- Participate and engage in relevant XR communities to grow networks and capabilities;
- Assist junior staff in the area(s) of expertise.

Qualifications, skills and experience:

- A Diploma in computer systems engineering, information technology or related fields to Extended Reality with at least seven years' experience in extended reality software development; **OR**

- A Bachelor's degree in computer systems/computer engineering, information technology or related fields with at least five years' experience in extended reality software development;
- Must have experience working with game engines and 3D modelling tools such as Unity, Three.js, Unreal Engine, Blender, 3D's Max or Maya;
- Must be proficient in programming languages such as C#, Python, HTML or JavaScript;
- Must be passionate, creative and open to experimental research and continuous learning to keep up with the fast pace of innovation in XR;
- Creative thinking and a strong attention to detail to create memorable and immersive gaming experiences;
- Ability to manage multiple projects simultaneously and meet deadlines in a fast-paced environment;
- Strong understanding of game development principles, including gameplay mechanics, physics, artificial intelligence, and multi functionality;
- Excellent problem-solving and debugging skills to identify and resolve technical issues;
- Passion for gaming and a deep understanding of various game genres and player experiences;
- Knowledge of graphics programming, shaders, and rendering pipelines;
- Familiarity with version control systems (Git), Agile development methodologies, and collaborative development practices;

Should you meet the above requirements, please email your CV to jobapplications@csir.co.za with your name and surname, position title and reference number in the subject line, **(eg. John Smith: Senior Developer: 3D Game Development: Reference No: 313145)**

Closing date: 17 May 2024

PLEASE NOTE THAT FEEDBACK WILL BE GIVEN TO SHORTLISTED CANDIDATES ONLY.

For more info, please email us at Recruitment03@csir.co.za. Please **do-not** send your application to this mailbox, it is only for inquiries.

*The CSIR is an equal opportunity employer. As such, it is committed to the employment Equity Act and will through the filling of this vacancy, give preference to candidates from designated groups in terms of the Employment Equity Act. By applying for this position at the CSIR, the applicant understands, and agrees that the CSIR may solicit a credit and criminal report from registered credit bureau and/or South African Police Services (in relation to positions that requires trust and honesty and/or entail the handling of cash or finances), and may also verify the applicant's educational qualification and employment history. **The CSIR reserves the right to remove the advertisement at any time before the stated closing date and it further reserves the right not to appoint if a suitable candidate is not identified.***