Virtual Reality/Augmented Reality Developer

Virtual reality (VR) and Augmented reality (AR) developers write and develop code for virtual reality (VR) or augmented reality (AR) software. Users interact with virtual reality environments by wearing ocular headsets or goggles where they feel immersed in an imaginary environment. Users can use augmented reality environments through their mobile devices where they can visualise and interact with virtual images (for example Pokemon Go).

VR and AR experiences are utilised across many sectors, such as gaming, heritage, tourism, healthcare, and education.

They may also be called Extended reality (XR) programmer, Mixed reality (MR) programmer or VR engineers.

The Work

You could be:

- meeting with designers to discuss a new project, such as its look, features and structures, and planning how you can write the code to achieve this
- writing code in programming languages such as java, C++, C# or Python for 3D game engines such as Unreal Engine or Unity
- developing concepts and code for augmented reality applications to work on smart phones or tablets, like ARKit for iOS devices or ARCore for Android devices
- working with designers and 3D artists to create environments, graphics and structures
- troubleshooting the application for bugs, and making sure it doesn't cause motion sickness in users
- testing and adjusting the product so it works properly with controllers or headsets
- once the product is released, writing updates or bug fixes for specific platforms
- writing and producing the software documentation
- keeping up to date with the latest technology trends or practices in the industry.

Pay

The figures below are only a guide. Actual pay rates vary, depending on:

- where you work
- the size of the company or organisation you work for
- the demand for the job.

Starting salaries tend to be around £30,000 a year rising to £45,000 a year. With experience this could rise to between £50,000 and £60,000 a year or more.

Salaries for freelance developers may vary considerably, but the latest reported average daily rate according to IT Jobs Watch was £350 per day (February 2024).

Conditions

- You will spend most of your time working at a computer in an office or studio, or remotely from your home.
- You work with other professionals, such as designers, computer animators, other VR/AR developers, and testers.
- Although you work basic office hours, you might have to work overtime to meet deadlines.

Getting In

- Most entrants have degrees (SCQF Levels 9-11) in subjects such as computer science, computer programming, 3D animation or games development.
- Many will already have experience working beforehand as a games programmer or similar.
- Glasgow School of Art offers a relevant BSc Hons degree (SCQF Level 10) in Games and Virtual Reality.
- The universities of Abertay, Edinburgh Napier, Glasgow Caledonian, Heriot-Watt and the West of Scotland universities offer degrees in computer games subjects.
- Entry requirements for most of these courses is 4-5 Highers usually including Maths plus National 5 English. Check with individual institutions for more details.
- Graduates in other subjects can take a postgraduate qualification (SCQF Level 11) in a relevant subject.
- You should build a strong portfolio of work showcasing any VR or AR applications you have developed - particularly if you have not worked in a relevant role before. You can find free courses online to get you started understanding how it works.

Skilled VR and AR developers are in demand for this rapidly growing technology, so job prospects are excellent. You could work in technology or gaming companies, design and creative agencies, educational companies, VE/AR start-up companies or tourist organisations. You will find jobs advertised on the internet on sites such as UK Gamesmap.

What Does It Take

You need to have:

- a creative imagination to visualise gameplay in a virtual environment
- attention to detail
- strong problem-solving skills
- good communication skills for liaising with designers and other developers
- project management skills.

You need to be able to:

- understand 3D modelling for creating and developing virtual objects and their workflow
- work alone and as part of a team
- understand how different game platforms work such as mobile devices or game consoles
- manage multiple tasks and prioritise workload effectively.

Training

- Training is usually on the job.
- This is a fast-moving industry, and you would need to keep up with developments by training while you are working.
- There are online training courses to keep your skills current from organisations such as the VR/AR Association (see contacts section below).

Getting On

- You could go on to be a project manager where you would oversee the AR/VR product development process.
- If you are specialising in one industry, you could move into others such as healthcare, education or retail.
- You could work freelance and contract your services out to organisations who require VR applications to be written for special projects.
- This is a growing industry worldwide and you could get the opportunity to work abroad.

More Information

VR, AR and MR (mixed reality - a mix of virtual and augmented realities) are collectively known as extended reality, or XR technology. This use with various tools and technologies is sometimes called immersive technologies.

Many industries are increasingly using this technology including education, gaming, finance, tourism, healthcare and retail. For example, the heritage sector can use both augmented and virtual reality, to recreate a destroyed venue or building and re-enact scenes with virtually created characters. Virtual reality can be used in medicine and all areas of healthcare from patient experience to medical training: medical students can learn about surgical procedures, or patients can use it in therapy, for example to overcome phobias.

Because of the wide range of applications and possibilities, Creative Scotland reported in January 2024 that £6 million is being funded into a 3-year cross-UK 'Immersive Arts' project to explore the potential of virtual, augmented and mixed reality technologies. It will give UK artists the opportunity to access training and facilities to help them put their ideas into action.

Contacts

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Statistics

Employment Status UK %

- 81.52% FT Employee
- 11.71% Self Employed
- 6.76% PT Employee
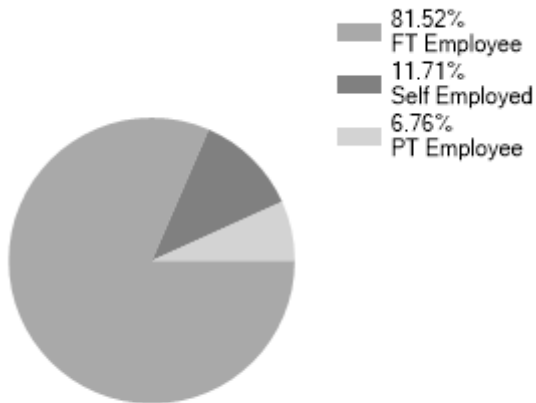
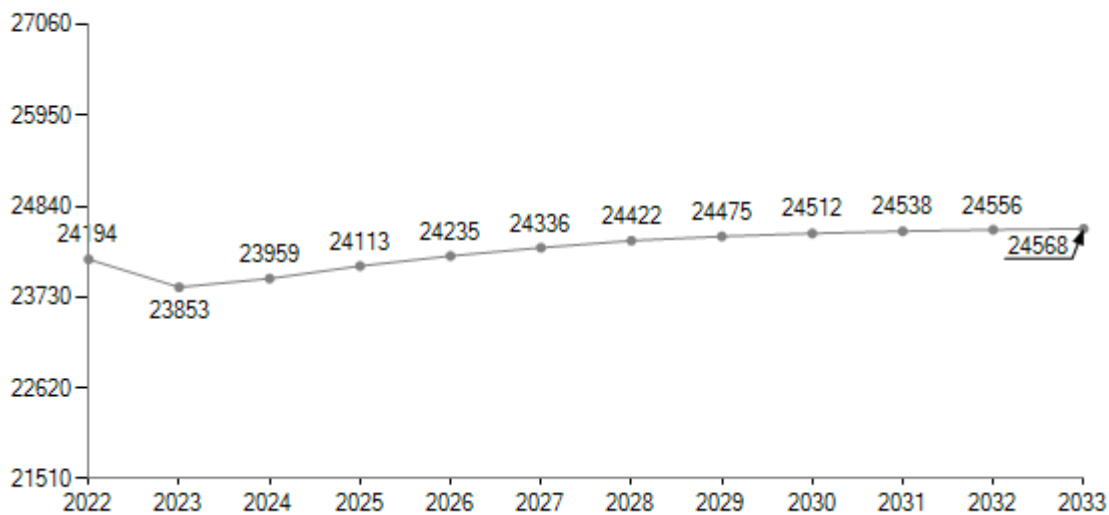**Past Unemployment - Scotland**

No Claimant statistics available for Scotland.

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Predicted Employment in Scotland

Year	Value
2022	24194
2023	23853
2024	23959
2025	24113
2026	24235
2027	24336
2028	24422
2029	24475
2030	24512
2031	24538
2032	24556
2033	24568

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