



# Sam Ghafari

## Senior Developer & Technical Director

Sam comes with years of both managerial and production experience. He has worked extensively in the computer graphics industry in real-time and media production. He strives to stay on the cutting edge of industry technology and pipeline development. This was most recently of benefit to the team working on the Cross River Rail project. Working with his team Sam was able to produce a digital twin of the proposed rail system to facilitate planning, decision making, and cost reduction. Not only does Sam utilise his vast experience to bring quality projects to life, but he also ensures that all stakeholders stay fully informed and are educated in the necessary technical aspects required to build and maintain large scale projects.

### Qualification

BSc (Computing),  
University of Plymouth  
UK, 2011

### Specialisation

Game Developer  
AR/VR/XR Developer  
3D Generalist  
3D Visualisation  
WebGL

### Years in Industry

19

### Contact

0403 835 798  
[info@Ghafari.co.uk](mailto:info@Ghafari.co.uk)  
[www.Ghafari.co.uk](http://www.Ghafari.co.uk)

## Relevant Experience

### NSW Government, Sydney Harbour Bridge 3D Visualization | Aurecon | 2024 – 2024 | Custom Power BI Integration

During Sam's engagement at Aurecon with Transport NSW, he developed a custom Power BI visual to introduce interactive 3D visualization capabilities to reports. This specialized tool allowed stakeholders to interact with 3D models directly within Power BI, providing an immersive way to view and analyse complex data related to the Sydney Harbour Bridge. Users could rotate, zoom, and explore detailed visual representations of the bridge, enhancing their ability to interpret statistics visually, structural statistics, and maintenance forecasts. This integration brought a new dimension to data analysis, facilitating a more engaging and intuitive user experience and enabling better-informed decision-making.

### Sunshine Coast Council, Caloundra Transport Corridor Upgrade (CTCU) | 2023 – 2023 | Real-time visualization

During Sam's tenure on the Caloundra Transport Corridor Upgrade project, he made a significant contribution by developing a cutting-edge real-time visualization tool using Unreal Engine with Virtual Reality capabilities. This innovative tool facilitated stakeholders and engineers in visualizing the proposed updates and evaluating the project's visual impact, thus enhancing public engagement and feedback. Additionally, the tool was seamlessly integrated with a large screen and a joystick controller, providing a user-friendly and interactive experience for thorough exploration of the project.

### Transport for New South Wales, The Western Distributor Network | 2023 – 2023 | Real-time visualization

Sam played a vital role in the Western Distributor Network project by leveraging Unreal Game Engine to develop an immersive and dynamic visualization digital environment for the new Sydney traffic signage update. The design team utilized this interactive real-time tool to evaluate different scenarios and arrive at the final designs, simulating and evaluating various traffic signage configurations in an interactive and visually stunning digital environment.

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### **Transport for New South Wales, North Sydney Wharf Upgrade | 2022 – present | Real-time visualization**

Sam has developed an online 3D real-time visualisation tool which enables the public to easily view proposed changes and engage in the community building process. He has created multiple iterations of this project in line with the various proposals submitted to ensure that all stakeholders in this project were able to access and understand changes to the project as it was finalised. These visualisations were also made available across multiple web platforms, including access to both desktop and mobile browsers. Previously the tool used to create these visualisations was only working offline. Sam has created a new platform that enables the previously offline visualisation tool to be available online. By moving the platform, he has removed the necessity for installation and increased ease of use for all stakeholders.

### **InLand Rail Euroa | Victoria | 2021 – 2022 | Real-time visualization**

Sam has been working with a team that utilises cutting-edge real-time rendering technology to visualise various design options considered for this project. This process helps the design team not only to assess potential risks and impacts, but also to better understand the complexities and potential obstacles prior to finalising design projects. This results in a smoother design decision making process, with clearer communication and understanding for all stakeholders.

### **Victorian Rail Infrastructure, Suburban Rail Loop | AJM | 2021 – 2022 | Real-time visualization**

Sam has been working with a team that utilises cutting-edge real-time rendering technology to visualise design concepts in an immersive environment. This process helps the design team not only to assess potential risks and impacts, but also to better understand the complexities and potential obstacles prior to finalising design projects. This results in a smoother design decision making process, with clearer communication and understanding for all stakeholders.

One of the substantial benefits of using this technology is the quick design iteration time. After a design, or several design options, are agreed upon by the design team, these products could potentially be produced in various multimedia such as videos, pictures, 360 Panorama videos and image, as well as interactive elements such as real-time walkthroughs.

### **Cross River Rail | Brisbane | Graeme Newton | 2018 – 2021 | Technical Director and 3D generalist**

Sam helped to create a Real-time tool for design review as well as an immersive experience and multimedia outputs. To produce this tool, he incorporated the BIM design data sourced from the 11 international architectural companies developing the project in connection with the Queensland Government.

In addition to writing significant portions of the code for this project, as Technical Director, he has developed and maintained a pipeline to improve data exchange processes and automation for large scale data from multiple sources in differing formats. He conducted regular site visits with field engineers, government representatives and other stakeholders.

Sam was in constant consultation with multiple design teams responsible for varying portions of this project. He reliably provided technical support and industry perspective to teams with little understanding of the complex processes involved and ensured that all clients are more than satisfied with the interactive build. He also served as a key R&D decision-maker, and the company invests in cutting-edge products and tools.

## **Built Environment**

### **Conquest of Istanbul | Istanbul | Government of Turkey, Mustafa Şentop | 2017 | Technical Director**

The Conquest of Istanbul is the world's largest 3D Projection Mapping project. Sam was the technical director for this project and was responsible for the 180-person team involved in delivering this project from conception to the event in a 40-day timeline.

This project later won the Apex award in Las Vegas (2017). He was involved not only in the delivery of the project but also in consulting during every stage with key stakeholders to ensure that their vision was technically possible. In addition to this large project, he was also a consultant on multiple smaller-scale

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projects, working with client's visions and budgets and ensuring that their expectations could be matched in the product. Part of these responsibilities involved meeting with university clients and selling them on investing in science-based VR programs.

### **Other relevant experience**

#### **Arnold Render Facebook Page | Facebook | Owner and Founder | 2008 to present**

Owner and Founder of the Arnold Render Facebook group with over 20,000 members. Sam actively curates content, and provides practical advice to members, in addition to fostering a community atmosphere and providing networking opportunities for the members of the page. An active member of Unity3d UE4, Autodesk Area, Computer Graphics Rendering and Nvidia forums.

### **Management skills**

- Project planning – effectively managing resources, tools, and team members to ensure that individual tasks were assigned to those best suited to complete them in a cost and time-effective manner.
- Identifying bottlenecks in the production process and creating tools, software, or pipeline adjustments to effectively reduce or remove them
- Managing client expectations against project deadlines and budget considerations. Communicating clearly and concisely with all stakeholders to ensure that clients and all other parties are thrilled with the finished product.

### **Technical skills**

- Autodesk Maya & 3ds Max, Adobe, Unreal & Unity, Nvidia Omniverse, React, BabylonJS
- Game, VR, AR, WebGL, Python, C#, React and TypeScript Developer

### **Awards and achievements**

- Conquest of Istanbul, 563<sup>rd</sup> Anniversary. DSE Apex Awards, Content of the Year, 2017
- Corporate Identity Image Film, Gloria Sports Arena Sportsnet. Aurora Award, 2014

### **Employment record**

- Aurecon | Senior Developer | 2021 to present
- V2i Group | Technical Director & Developer | 2018 – 2021
- Dream-box | Technical Director, 3D Generalist, Game Developer | 2011 – 2018
- Didar Film | 3D Generalist | 2002 – 2009

### **Referees**

- Sam Shepherd | Studio Director, Unsigned Studio | 0402 443 670 | sam.shepherd@aurecongroup.com
- Jordan Haines | Digital Relationship | Cross River Rail | 0431049293 | jordan.haines@gmail.com
- Amir Azizi | Script Writer | Paramount pictures | +1 323 688 80 64 | artamira@me.com
- Gerrard Haggerty | Multimedia Specialist | V2i Group | +0422 161 255 | theweehags@hotmail.com

### **Languages**

English, Persian, Turkish, Azeri