Flavio Franzin

Game Developer | Technical artist

ffranzin@inf.ufsm.br | flaviofranzin.com | linkedin.com/in/ffranzin | Brazil, Rio Grande do Sul (RS)

6+ years in game development with experience in scripting, graphics, 3D modeling, and balancing performance and visuals. I contributed to the development of a 3D military training simulator for the Brazilian Army. Currently, developing a decentralized facial authentication network with world-scale potential at CAF. Interested in game, graphics, or tool programming, particularly projects with optimization challenges or artistic involvement.

Work Experience

Software Engineer | CAF | Brazil, RS | Nov 2021 - Present

- Contributed to the design, prototyping, and development of a decentralized facial authentication network that is currently in the proof-of-concept phase with large banks and fintechs as customers;
- Implemented a face match solution capable of comparing thousands of faces — trillions of comparisons — in a few minutes, saving time compared to a previous solution that took days;
- Suggested and evaluated using large amounts of cost-effective hardware for pipeline data processing, leading to cost savings compared to using a few high-performance hardware.

.NET, Database, Git, Docker, Scripting, Testing, System Design, Observability.

Game Developer | SIS-ASTROS | Brazil, RS | Jan 2017 - Nov 2021 ◦ 4 yrs 11 mos

- Part of the development team and involved in many decisions related to the development of an engine to visualize large virtual landscapes (over 500x500 km);
- Developed an optimized GPU system for real-time rendering and placement of thousands of trees and small plants, considering environmental factors such as rivers, roads, and precipitation;
- Developed a low-storage solution for grass and terrain deformation caused by vehicles' movement, fulfilling a customer desire that was declined due to computational challenges;
- Restructured the cutscene creation process and guided artists to optimize over-details 3D assets, resulting in more manageable and less time-consuming changes;
- Developed dynamic data structures to optimize access to bulk data sets, resulting in a +80% speed-up in terrain rendering;
- Identified and fixed performance bottlenecks involving game mechanics, graphics, and 3D assets, resulting in improvements of up to +30% in overall game performance.

Unity, C#, HLSL, Git, Compute Shaders, Shaders, Blender, Optimization, Scripting, Graphics.

Technical Artist | SIS-ASTROS | Brazil, RS | Apr 2016 - Jan 2017 ◦ 10 mos

- Collaborated in the development of a real-time procedural bridge system by modeling 3D bridge components and working closely with developers during system design;
- Implemented shaders for dynamic soil effects on vehicles based on weather and soil types;
- Created low-poly 3D models and implemented dynamic animations for ASTROS battery vehicles.

Unity, C#, Git, Shaders, Blender, Substance Painter, Substance Designer, Scripting.

Education

MSc in Computer Graphics
Federal University of Santa Maria, Brazil

BSc in Computer Science
Federal University of Santa Maria, Brazil

Publications

Menegais, R. N., Franzin, F. P., Kaufmann, L. S., & Pozzer, C. T., A., **Raster-based Approach for Waterbodies Mesh Generation**. GRAPP — International Conference on Computer Graphics Theory and Applications, 2021

Kaufmann, L. S., Franzin, F. P., Menegais, R., & Pozzer, C. T., **Accurate Real-time Physics Simulation for Large Worlds**. GRAPP — International Conference on Computer Graphics Theory and Applications, 2021.

Franzin, F. P., Pozzer, C. T., & Nascimento, B. T., **GPU-Based Rendering and Collision Simulation of Ground Vegetation in Large-Scace Virtual Scenarios**. SBGames — Brazilian Symposium on Computer Games, 2019.

Nascimento, B. T., Pozzer, C. T., & Franzin, F. P., **Procedural Editing of Virtual Terrains Using 3D Bezier Curves**. SBGames — Brazilian Symposium on Computer Games, 2019.

Nascimento, B. T., Franzin, F. P., & Pozzer, C. T.,, **GPU-Based Real-Time Procedural Distribution of Vegetation On Large-Scale Virtual Terrains**. SBGames — Brazilian Symposium on Computer Games, 2018.