Sahil **Ramani**

SENIOR SOFTWARE ENGINEER · MACHINE LEARNING & GRAPHICS

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Summary

Currently building user-facing software for Unity Technologies at the intersection of Machine Learning and Graphics. 8+ years of game development experience, leading small teams and executing on R&D projects that will shape the future of building games, both at Unity Technologies as well as Crystal Dynamics. Interested in projects that aim to improve user experience with high-performance, high-quality results at a fraction of the effort.

Work Experience

Unity Technologies
Seattle, WA, USA

SENIOR SOFTWARE ENGINEER / SOFTWARE ENGINEERING MANAGER · *Aug. 2019 - Present*

- Build and productionize state of the art tools that use Machine Learning to simplify the task of creating large worlds in games.
- Managed a small team of engineers that explored the possibility space of improving lighting & rendering in games using Machine Learning.

Crystal Dynamics
Redwood City, CA, USA

ENGINE LEAD, FUTURE PROJECTS / SENIOR SOFTWARE ENGINEER / SOFTWARE ENGINEER · *Nov 2014 - Aug 2019*

- Led a team of engineers developing technology for the future of games at Crystal Dynamics.
- Improve tool frame rendering abilities and performance by over 2x, creating specialized tool render code.
- Improved editor performance by over 20x in 2 years.
- Retrofitting improved threading capabilities into the editor.
- Added support for advanced scripting capabilities in-editor.
- Engineered solutions to support multiple users working on the same area in editor.

Dreamworks Dedicated Unit
Bengaluru, Karnataka, India

SOFTWARE APPLICATIONS ENGINEER, ANIMATION & RIGGING TOOLS · *Mar 2013 - Oct 2014*

- With the R&D team, developed the award-winning animation and rigging tools for DreamWorks Animation.
- Improved design of cache handling and paging to improve editor performance.
- Prototyped high-performance memory models for the next generation rigging tools.

Microsoft Corporation
Redmond, WA, USA

SOFTWARE DEVELOPMENT ENGINEER IN TEST, XBOX GRAPHICS · *July 2011 - Oct 2012*

- Improved low-level DirectX 11 and 11.1 API, shader and texture tiling test framework.
- Eliminated over 2500 issues with the existing test suite implementation. Collaborated with other teams to import tests from other frameworks into custom test suite.
- Implemented an automated process controller debugger to detect and recover from catastrophic failures.

Nokia Research Center
Santa Monica, CA, USA

RESEARCH INTERN, MOBILE EXPERIENCES · *May 2012 - July 2012*

- Enhanced augmented reality framework on Nokia N900 (Meego OS) to support real-time games. Added audio-video overlay capabilities; constructed a scaffolding framework for game development using Qt/C++.

Yahoo! Software Development (India)
Bengaluru, Karnataka, India

SENIOR SYSTEMS ENGINEER / SYSTEMS ENGINEER · *July 2006 - July 2009*

- Ensured availability of data employed for business-critical decisions by deploying/automating and maintaining large distributed multiprocessing clusters for data manipulation; used Torque/Maui and homegrown distributed computing frameworks on FreeBSD/RHEL.

Honors & Awards

PATENTS

2021	**Patent No. 11189068,** Macro-based electronic map editing	*USA*
2022	**Patent Pending,** System and Method for Interactive Asynchronous Tile-Based Terrain Generation	*USA*

Education

University of Southern California
Los Angeles, CA, USA

MASTERS OF SCIENCE IN COMPUTER SCIENCE, GAME DEVELOPMENT · *Aug 2009 - May 2011*

- Developed 3 games including Songlines; created a dynamic terrain editing and visual effects for this game on Unity; game was featured in the E3 Independent Games Festival IndieCade showcase in Los Angeles, California.

BMS College of Engineering   *Bengaluru, Karnataka, India*
Bachelor of Engineering, Computer Science   *Aug 2002 - June 2006*

Udacity   *Online*
Nanodegree, AI For Trading   *Jun 2021 - May 2022*

Udacity   *Online*
Nanodegree, Deep Learning   *Jun 2020 - Oct 2020*

Select Projects ──

Graphics, Shaders and Visual Engineer   *USC*
Songlines (DirectX9)   *2011 - 2012*
- Appointed as the sole graphics engineer for entire game lifecycle.
- Substantial contributions include designing and implementing dynamic terrain deformations, day/ night cycle, seamless, and endless terrain generation.

Engine, Graphics and Shader Programmer   *USC*
The Bridge (DirectX9, Xbox)   *2010 - 2012*
- Efficiently designed core graphics engine for deferred rendering, created an efficient shader manager and post processor.
- Played a substantial role in designing and implementing several shaders including blur, HDR, bloom, cloaking and geometry instancing.