

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 helped shape the future of building games, at Unity Technologies as well as Crystal Dynamics. Interested in projects that aim to improve the lives of consumers by providing high-quality results with minimal user 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 multiprocess-ing 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

FORMAL

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

- Developed many applications as a part of curriculum, including a 2D side-scroller game and an image manipulation game.
- Served as the student body head for the Computer Science Department.

ONLINE

Udacity

Online

NANODEGREE, AI FOR TRADING

Jun 2021 - May 2022

- Built real-world, practical projects including: Trading with momentum, NLP on financial statements, Sentiment Analysis and backtesting.

Udacity

Online

NANODEGREE, DEEP LEARNING

Jun 2020 - Oct 2020

- Solid fundamentals on machine learning including CNNs, RNNs and GANs.
- Built practical applications including sentiment analysis models, generating faces and writing TV scripts.

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.