

# Sahil Ramani

SENIOR SOFTWARE ENGINEER · 3D SIMULATION

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## Summary

As an accomplished software developer with over 12 years of experience, including 4 years of specialization in machine learning, I have a proven track record of leading teams focused on R&D projects. Lately, I have been augmenting my expertise in machine learning, quantitative analysis, and algorithms to develop real-time trading strategies, utilizing my talents to create trading software during my free time. I am passionate about developing innovative solutions that push the boundaries of what's possible with technology, and I'm always eager to take on new challenges.

## Skills

<b>Programming Languages &amp; Frameworks</b>	C#, C, C++, Python, Bash Scripting
<b>Machine Learning</b>	NeRF, Object Reconstruction, Gaussian Splatting, Convolutional Neural Networks, Neural Rendering
<b>Version Control</b>	Perforce, Git, SVN, Mercurial

## Work Experience

### Zoox Inc

SENIOR SOFTWARE ENGINEER

Foster City, CA

July 2023 - Present

- Developed **3D Simulation and Synthetic Data** generation tools, boosting Zoox model performance by over 20%.
- Engineered frameworks for **dataset quality** evaluation using **ML and statistical approaches**, enhancing data integrity.
- Led projects to create realistic simulated worlds, employing state-of-the-art technologies like **NeRF, Gaussian Splatting**, and related techniques.

### Unity Technologies

SENIOR SOFTWARE ENGINEER / SOFTWARE ENGINEERING MANAGER

Seattle, WA, USA

Aug. 2019 - July 2023

- Developed a Unity extension using **Neural Rendering** to dynamically transform game visuals, featured in the Beta teaser for the future of **Unity AI**.
- Significantly enhanced **machine learning efficiency** by designing **custom GPU kernels & operations**, which streamlined both training and inference processes, reducing overhead and accelerating performance.
- Led a team of engineers** in pioneering research to leverage machine learning for superior game lighting and rendering.
- Implemented high-performance, **GPU-accelerated tile-stitching** for Unity's terrain system with zero latent allocations.
- Patent 18/144,734**: System and Method for Interactive Asynchronous Tile-Based Terrain Generation

### Crystal Dynamics

ENGINE LEAD, FUTURE PROJECTS / SENIOR SOFTWARE ENGINEER

Redwood City, CA, USA

Nov 2014 - Aug 2019

- Directed R&D efforts at Crystal Dynamics, **leading engine and tool technology advancements** for next-gen games.
- Engineered a groundbreaking **graph-based blendshape control system** from Maya to game, pivotal for Hulk's transformation in Marvel's Avengers.
- Dramatically increased editor and rendering performance, achieving over 20x and 2x improvements respectively within two years.
- Patent #11189068**: Macro-based electronic map editing.

### Dreamworks Dedicated Unit

SOFTWARE APPLICATIONS ENGINEER, ANIMATION & RIGGING TOOLS

Bengaluru, Karnataka, India

Mar 2013 - Oct 2014

### Microsoft Corporation

SOFTWARE DEVELOPMENT ENGINEER IN TEST, XBOX GRAPHICS

Redmond, WA, USA

July 2011 - Oct 2012

### Nokia Research Center

RESEARCH INTERN, MOBILE EXPERIENCES

Santa Monica, CA, USA

May 2010 - July 2010

### Yahoo! Software Development India

SENIOR SYSTEMS ENGINEER / SYSTEMS ENGINEER

Bengaluru, Karnataka, India

July 2006 - July 2009

## Education

### Masters of Science in Computer Science, Game Development

UNIVERSITY OF SOUTHERN CALIFORNIA

Los Angeles, CA, USA

Aug 2009 - May 2011

### Bachelor of Engineering, Computer Science

BMS COLLEGE OF ENGINEERING

Bengaluru, Karnataka, India

Aug 2002 - June 2006

### Udacity

NANODEGREE, AI FOR TRADING

Online

Jun 2021 - May 2022

NANODEGREE, DEEP LEARNING

Jun 2020 - Oct 2020