NEERAJ SINGH THAKUR

Game Programmer

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I am graduate from IIT Kanpur, experienced in leveraging agile frameworks to provide a robust code for high level development and have a confident command over Unity3D, C#, C++, Cg/HLSL, Java having worked in AI, Animations, UI, 3Cs, Level Design, Optimization, Shader Graph, Render Pipelines, VR/AR technology. I am self-motivated critical thinker with excellent communication skills and very passionate about new advancements in gaming industry.

Work Experience

Centre for Content Creation, Game Programmer, *(Jan18 - Present)*

- Using IP characters to build game aiming to teach biology for **iOS** platform using **Unity3D** and **C#** ***(VS code** IDE)*
- In-charge of builds and debugging of **Android** platform. Using **Git** version control on Source Tree
- Built special skills, weapon auto-toggle, status & hit VFX, **gyro** camera mini-game and in-game alert system
- Helping in **AI**, **3Cs**, Animations, UI, **Shader Graph**, Debugging, **Optimization** and Scriptable **Render Pipeline**

Build Corner, Unity Programmer, Freelancer, *(Nov 17 - Jan 18)*

- Wrote Surface Shaders in **Cg/HLSL** for VR **Oculus** Go to create realistic 'Tile Visualizer' with dynamic patterns and grouts settings that are changeable in runtime with most optimized Unity3D setting

Mech Mocha Game Std. Pvt. Lim., Game Programmer Intern, *(May 16 - July 16)*

- **Multiplayer unitypackage: ** Built a layer using Java and Android Studio which uses **Bluetooth API** & **Nearby Connections** and **Messages API** for offline and online communication for Unity3D and C#

Indie Game Developer and Gameplay Programmer *(May14 - Present)*

- **Retro Snake3D: Procedural generated** levels| Android| designer friendly exposed parameters| Shipped
- **Chemical Carriageway: ** Infinite runner| Android| Unity3D, C#| Performance, Size Optimization| Shipped
- **Mixed Reality Encyclopedia: VR/AR** edutainment android application for **Google Cardboard** built in 24-hours of Microsoft Code.fun.do hackathon at IIT Kanpur

(Visit my portfolio for more projects and information)

Publications

Reactive Display for Virtual Reality: ** Designed and built **3D interface to browse through 360° contents in Virtual Reality and instigate feeling of discovery while exploring 360° and normal content. Tackled the problem of nausea caused by existing interfaces like photospheres by providing an intermediate interface before changing 360° content using **Homography** (Computer Vision) and dynamic field of view of cameras. Poster Paper published at **ISMAR** (IEEE Symposium on Mixed and Augmented Reality)

Technical Skills

Programming Languages	C# (>3 years), Cg/HLSL, C++, Java, Js (>1 years), C, Python (<1years)
Game Engines and IDEs	Unity3D, Android Studio, Visual Studio Code, MonoDevelop, Sublime Text
SDKs and APIs	Google VR, Nearby Connections & Messages, Vuforia AR, OpenGL, Bluetooth
Version Control & Tools	Git (Source tree, Fork and Terminal)

Education

Indian Institute of Technology (IIT) Kanpur, Bachelor of Technology, *(Jul 13 – Jul 17)*

Major: Materials Science and Engineering, ***CPI: 8.0/10.0***

- Data Structure & Algorithms, Computer Science & Graphics, Fundamentals of Computation, Physics, Calculus, Analytic Geometry, Trigonometry, Algebra, Engineering Graphics, Computational Methods in Engineering, OOPs

Extracurricular Activities

- Lectured on **Unity3D** during GDG Google Dev Fest, introduced game development in IIT Kanpur
- **Mentored** 7 teams of students under Programming Club, IIT Kanpur to help developing their first game
- **Head Show Management, Core Team, Techkriti 2016, IIT Kanpur**: Planned and conducted India's biggest technical and entrepreneur festival with budget of over ₹20 Million leading a 3-tier team
- Worked as a **Consultant Developer** to lead a team in IIT Kanpur aiming to build multiplayer education game for village students. Project was funded by Madhya Pradesh (India) Government.

Blogs

Designing Game to Teach Soft Skills : Four-part blog, focusing on advantages in game-based learning and teaching soft skills to players using different genre games published at **Gamasutra**. Useful guide, based on practical examples, of how training methodologies can be adopted by a wide range of professionals and for a wide range of purposes, such as to enhance traditional training practice, boost participants' learning experience, heighten participants' self-awareness and self-confidence, facilitate knowledge, promote skills and competencies and personal as well as group development.

Implementing Escher Effect in Unity3D: Inspired from Monument Valley (*Ustwo Games*), this ongoing blog focuses on creating a Unity Extension to implement illusion of impossible-objects in world space and making game character interact with it. Created additional axis for every object at different location based on camera position. Two different positions in new z-coordinate ensured same screen position in an isometric orthographic camera. Tried and tested the system for Penrose Stairs and Triangle.

Making your game listen to music: Building a platform for level designers for helping them setting base for rhythm games. System used *Spectrum Data* of a sound clip and have a callback for a minimum threshold value. This callback can be used by programmers to procedurally build terrain, path, boulders or set rough high/peak nodes which later be manipulated by designers for better gameplay experience.

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