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 working in games involving AI, Animations, UI, 3Cs, Optimization, Shader Graph, VR/AR technologies.

Work Experience

Centre for Content Creation, Jr. Game Programmer, *(20-Jan-18 to Present)*

- Using IP characters to build game aiming to teach biology to younger audience in **Unity3D** and **C#**.
- In-charge of builds and debugging of **Android** platform. Used **Git** version control and **VS code** IDE.
- Built special skills attack, weapon auto-toggle, status & hit VFX and in-game alert system
- Helped in **AI**, **3Cs**, Animations, UI, **Optimization**, Gyro camera mini-game, **Shader Graph** and Bugs fix
- Actively participated in discussions and proposed new methods to improve and optimize game

Build Corner, Unity Programmer, Freelancer, *(7-Nov-17 to 15-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, *(7-May-16 to 21-July-16)0*

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

Indie Game Development *(May 2014 to Present)*

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

(Visit my portfolio for more information and projects)

Technical Skills

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

Education

Indian Institute of Technology (IIT) Kanpur, Bachelor of Technology, *(July 2013 to July 2017)*

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

- Relevant undergraduate courses: Data Structure & Algorithms, Computer Graphics, Fundamentals of Computation, Object Oriented Programming, Calculus & Analytic Geometry, Linear Algebra, Engineering Graphics, Computational Methods in Engineering

Publications

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

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.