

KSHITIJ KUMAR

EXPERIENCE ARCHITECT

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Portland, USA

INDUSTRY EXPERIENCE

Experience Architect - Gaming | Computer Graphics

CPXA, Intel

2022 - Present Portland, USA

Research & Experience Definition

Experience definition for Gaming & Computer Graphics.

HCI Lead & Product Architect

Gather AI

2020 - 2022 Portland, USA

3D Volumetric Pipeline & Interface

Architect for the 3D Volumetric AI pipeline using autonomous drones. iPad & Web Dashboard design.

HCI Researcher | Prototyper | Architect for Spatial Computing, Graphics & Vision

Pathfinding Lab, Next Generation & Standards, Intel

2016 - 2020 Portland, USA

XR HMD Reference Design & Prototyping:

Prototyped a reference design of an XR HMD across the HW & SW stack. Tasks involved WaveGuide Optics integration, Game Engine calibration, volumetric file support, depth & 6DoF tracking, 3D printing, design & assembly of wearable compute pack, touch display & wireless connectivity.

Spatial Compute & Analytic Framework (XR Cloud):

Researched & kick-started project ReFrame for real-time hyper-local XR tracking & navigation, visual analytics, location sharing, mapping, SW orchestration & edge compute over 5G.

HCI & Lead Interaction Architect/Designer

UX Design Labs

2013 - 2014 Bangalore, India

Scrmble:

Web-based social gaming portal for creating, sharing and earning achievements across Geo-locations.

HCI & Lead Interaction Architect/Designer

Ernst & Young

2010 - 2013 Pune, India

Microsoft Enterprise Mobility Suite:

A unified collaboration and communication suite that enables Microsoft SharePoint, Microsoft Lync, Remote Desktop and Print on Android and iOS devices.

NEC/Verizon Cloud Suite:

Built-in cloud backup assistant application to securely save, manage, and share media files for an All-Terrain mobile device from NEC Casio.

ACADEMIC PROJECTS

Elizabeth Forward School District, Carnegie Mellon University

2015 Pittsburgh, PA

3D Graphics & HCI Lead:

- AweSeven:** Worked in a multidisciplinary team to create engaging educational games via integrating 3D object tracking, video projectors, motion-capture, and multi-speaker surround sound.
- Entropy:** Tablet puzzle game that uses the laws of thermodynamics as its core mechanics to encourage players to think like a physicist rather than a gamer through innovative gameplay and design.

National High School Game Academy, Carnegie Mellon University

2015 Pittsburgh, PA

Teaching Assistant, 3D Graphics & HCI:

Taught the principles of 3D Graphics, HCI, Motion & Hand Tracking, & Game Engine Development Pipeline to a diverse group of 50+ high school students.

Secondary Worlds, Carnegie Mellon University

2015 Pittsburgh, PA

Independent Researcher:

Inspired by On Fairy-Stories, an essay by J. R. R. Tolkien, my research explored the link between cognitive mindfulness & the entropy of information. Investigated & constructed a mathematical model for when & why a user transitions from Primary to Imaginary Secondary Worlds.

Google Glass, Carnegie Mellon University

2015 Pittsburgh, PA

Interaction Researcher & Architect:

Created a visual inference prototype on Google Glass. Built on the concept of deductive reasoning & progressive insight. The goal was to have the end user visualize the world like Sherlock Holmes.

EDUCATION

Master of Entertainment Technology, Major in Computer Graphics

Carnegie Mellon University

📅 2014 - 2016 📍 Pittsburgh, PA

- Building Virtual Worlds, Real Time 3D Graphics, Visual Story Telling, Game Design & Development, Location-Based Entertainment, Rigging & Animation, XR Prototyping, Motion Capture & Tracking, Projection Mapping, Improvisational Acting.

B. Tech Electronics and Telecommunication

University of Pune

📅 2005 - 2010 📍 Pune India

- Microprocessor and Microcontroller Architecture, Signals & Systems, Network Theory, Analog Communication, Digital Signal Processing, Electromagnetic Waves & Radiation, Audio & Video Engineering, Optical & Microwave Communication, VLSI Design, Mechnronics, FPGA Prototyping, Wireless Data Acquisition using Zigbee, Information Theory & Coding Technology, Electronic Measurement System.

ONLINE COURSES

Human Computer Interaction

Stanford University

Introduction to Logic

Stanford University

Social Network Analysis

University of Michigan

Design: Creation of Artifacts for Society

University of Pennsylvania

SUMMARY

10+ years of experience in HCI, Graphics/Vision & Electronics & Telecommunication, has catalyzed my holistic approach to computing.

I see it as a thread that binds "Empathy with Entropy".

And I look forward to opportunities where my insights can help accelerate innovation forward.

SKILLS

Tools

Unity Unreal Engine

Adobe Photoshop Adobe Illustrator

Adobe After Effects Adobe Xd

Adobe ID Adobe Premier

Cinema 4D Quixel

Octane Renderer Redshift Renderer

Autodesk Maya Autodesk 3ds Max

Autodesk Recap MeshLab

Reality Capture CloudCompare

Pro Tools Logic Pro Figma

Programming Languages

C++ C# Python

Design Thinking

HCI Research Path-finding

Prototyping Evaluations

Information Architecture

Interaction Design

HW Prototyping

FPGA Computer Assembly

Wearable Sensor Fusion HPC

Servers 3D Printing

Optics & Display XR HMD's