

# RENU HIREMATH

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## WORK EXPERIENCE

### Intel Corporation

Santa Clara, CA  
Aug '19 - Present

#### Graphics Software Engineer

- Key contributor to the Windows Graphics Driver for DirectX 12 using C++ in a Visual Studio environment
- Successfully resolved critical game bugs, using tools like GfxBench and GPA, highlighting strong problem-solving skills and attention to detail
- Collaborated closely with cross-functional teams to ensure seamless integration of graphics technologies
- Integral in debugging and delivering Day0 drivers for top games, emphasizing commitment to deadlines and quality delivery

### USC Viterbi School of Engineering

Los Angeles, CA  
Jan '19 - May '19

#### Course Producer

- Collaborated with the TA in conducting office hours and mentoring 30+ students
- Responsibly graded assignments written using C++ and OpenGL and exams for the Computer Graphics course
- Effectively addressed student queries contributing to a positive learning environment

### CommVault Systems

Bengaluru, India  
Jul '16 - Jul '17

#### Associate Engineer

- Developed critical features to streamline backups and restores related to VMWare vSphere
- Managed end-to-end feature development in C++ and Java ensuring timely releases
- Implemented features in a VM Discovery Tool for VMWare vSphere and Microsoft Azure which helped customers make informed decisions about CommVault resources by reporting statistics of VMs in the 2 hypervisors
- Achieved high levels of customer satisfaction by directly interacting with customers to resolve issues

## PROJECTS

### Jello Cube Animation

- Programmed an OpenGL-based interactive physically-based simulation of a jello cube using a 3D mass-spring network
- Calculated the movement based on the force due to structural, shear and bend springs

### Animation of Character Skeletons with Kinematics

- Implemented skinning, forward kinematics and inverse kinematics using OpenGL to deform a character
- Leveraged skinning transformations and Tikhonov regularization to perform inverse kinematics

### Simulation of a Roller Coaster Ride

- Created an OpenGL application to simulate a roller coaster ride using Catmull-Rom splines to design the path
- Implemented lighting and texture mapping for an immersive experience

### Video Summarization using Tapestry

- Constructed a tapestry of keyframes in a video to provide a concise summary using Color Histogram and Edge Detection
- Succeeded to build a video player using Java, in a team of 2, to demonstrate interaction with the summarized tapestry

### Social Lens

- Developed a mixed reality app in a team of 7 for social interaction using MS HoloLens
- Integrated facial recognition to display the person's latest Instagram posts and Tweets as overlays
- Incorporated speech recognition with keyword identification to create notes for lookup

## EDUCATION

University of Southern California, Los Angeles, CA  
P.E.S. University, Bengaluru, India

**M.Sc. Computer Science, Multimedia and Creative Technologies**  
**B.E. Computer Science and Engineering**

## PUBLICATION

### An automated evaluator for a classical dance — Bharatanatyam (Nritta)

2017 Second International Conference on Electrical, Computer and Communication Technologies (ICECCT)

## SKILLS

**Technical Skills:** C++, Python, OpenGL, DirectX12, Git, C#, Visual Studio, JIRA, WinDbg, GfxBench, Intel GPA, Microsoft PIX

**Soft Skills:** Project Management, Team Collaboration, Time Management, Adaptability, Agile Development