

## Skills

### Languages

### Application Programming Interfaces

### Tools

### Platforms

### Database Technology

C++, C# (ASP.NET), Java, Python, ActionScript 2

OpenGL, Qt, XNA, Boost, CGAL

Perforce, SVN, Nant, Visual Studio 2008, Eclipse

Nintendo 3DS, XBOX 360, Windows 7

Oracle 9i, PL/SQL, SQL Server, JDBC

## Employment

- **Electronic Arts, NC (USA)** July 2010 – Present  
**Role:** Contract Software Engineer  
*Unannounced Title (Nintendo 3DS)*  
**Technology: C++, C#, ActionScript2, Nant Scripts, Python**
  - Extended rendering primitives to support in-game User Interface elements in depth
  - Collaborated extensively with the UI designer to get Flash/ActionScript screens working in game
  - Modified asset pipeline using Nant scripts to support new game modes
  - Moderated C#/Nant scripts which dealt with compiling all the assets of the game
  - Setup compiler defines to handle different build configurations in sync with all the other dependency packages
  - Worked closely with other team members to ensure project deliverables are completed on-schedule
- **University of North Carolina, Charlotte (USA)** July 2009 – June 2010  
**Role:** Research Assistant  
**Technology: C++, OpenGL, Qt, CGAL, Boost**
  - Developed software for reconstructing terrain-surface using Marching Triangle Algorithm
  - Implemented Delaunay Triangulation constraint
  - Implemented renderer in OpenGL to view the CGAL Polyhedron model
  - Studied computational geometry concepts such as Polyhedron and half-edge data structures
- **3i Infotech, India** Nov 2007 – Feb 2008  
**Role:** Software Engineer  
**Technology: SQL Server**
  - Communicated technical concepts to non-technical managers
  - Interacted, interviewed, and gathered functional user-requirements from client
  - Reviewed System Requirements Specifications
- **Mahindra Satyam, India** Oct 2006 – Apr 2007  
**Role:** Software Engineer  
**Technology: Java, Oracle 9i, PL/SQL, Informatica ETL**
  - Developed prototype application in J2EE technologies for undisclosed automotive sector client
  - Underwent training in advance Database applications using Oracle 9i, PL/SQL, Informatica ETL and ASP.NET (C#)
- **Ministry of Information Technology, Govt. of India** Jan 2006 – Jun 2006  
**Role:** Intern  
**Technology: Java Swings, JDBC, MVC**
  - Simplified decision-making for client by facilitating managers to work at concept or knowledge level
  - Designed software individually using 3-tier architecture of Presentation, Application & Data Layer
  - Implemented design patterns using MVC framework, Data Transfer Object, Data Access Object
  - Implemented validation layer attached to Presentation and DAO Layer
  - Implemented flexible search utility giving user the option to search based on desired fields
  - Developed custom Exception Library to provide useful messages to the client

## Independent Projects & Graduate Coursework

- **Kolor (PC)** (In progress) [www.p-yank.com](http://www.p-yank.com)  
**Technology: C++, OpenGL, Qt Framework, Boost, OpenGL Mathematics**

- Designed 3D First Person Shooter with a unique game mechanic of claiming enemies by Colouring
  - Developed collada-DAE importer to get 3D models into the game
  - Implemented custom Frame Transformation classes & First-Person Camera
  - Developed Bounding Sphere(s) hierarchy information for the imported DAE model to complement collision detection subsystem
  - Implemented efficient hash-based collision detection/resolution for players and bullets in game world
  - Improved rendering performance using Vertex Buffer Objects
- **Juhuligan (PC)** [www.p-yank.com](http://www.p-yank.com)  
**Technology: C#, XNA**
    - Designed a side scrolling 2D-Arcade game inspired by Mario and Contra
    - Focussed the game code to follow object oriented architecture
    - Implemented game State management utilising State design pattern & finite state automata
    - Developed User Interface that used Bezier curves to change player's expression
    - Designed and Developed enemy AI using Finite State Machines
  - **High Dynamic Range Images (Coursework)**  
**Technology: Matlab**
    - Implemented the High Dynamic range algorithm to retrieve the original color response function for a given photographic scene
    - Final image result closely resembles natural scene and lighting conditions as seen with naked eye
  - **Racquet Ball game (Coursework)**  
**Technology: C++, OpenSceneGraph**
    - Simulated experience of a Racquet ball game using the CAVE Virtual Reality technology
    - Player body was tracked with head mounted tracking

## Education

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| <ul style="list-style-type: none"> <li>• <b>University of North Carolina, Charlotte(USA)</b><br/> MS in Computer Science<br/> (Graphics and Visualization)</li> </ul> | <ul style="list-style-type: none"> <li>• <b>U.P. Technical University, Lucknow(India)</b><br/> BS in Computer Science<br/> (Software Development)</li> </ul> |
| GPA: 3.8/4.00<br>May 2010   | July 2006  |