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## EDUCATION

- 2011 - 2013 **Master of Entertainment Technology**  
Entertainment Technology Center, Carnegie Mellon University, Pittsburgh, USA
- 2006 - 2010 **Bachelor of Engineering, Information Technology**  
D.J.Sanghvi College of Engineering, University of Mumbai, Mumbai, India

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## EXPERIENCE

- Apr'16 - present **Research Engineer**  
MultiComp Lab, Carnegie Mellon University, Pittsburgh, USA  
Serving as the engineer on the group focused on building algorithms to analyze, recognize, and predict subtle human communicative behaviors in social context  
Notable Projects:
- **MultiSense**  
Architected and implementing a platform for incorporating state-of-the-art algorithms for processing multimodal human behavioural signals
  - **MultiSense Recorder**  
Developed a multi-device audio and video capture system for behavioural data acquisition using FFmpeg, OpenCV, and ZeroMQ
  - **SCIPR (Sensing Curiosity in Play and Responding)**  
Implemented the data acquisition system for recording sessions of four children playing a board game. Mentoring an intern on identification and modeling of behaviours to sense curiosity
  - **Audiovisual emotion recognition**  
Developing temporal models for recognition of dimensional and categorical emotion
- Apr'14 - Apr'16 **Lead iOS, UX Developer**  
ProductionPro, Inc., New York, USA
- Designed and implemented core client-side systems of the flagship product: a real-time collaborative platform for visualizing scripts for TV, film, and theatre
  - Led UX decisions and interaction design of user facing aspects of the product
- Jun'13 - Apr'14 **Research Associate - Computer Vision**  
Disney Research Pittsburgh - Walt Disney Imagineering R&D, Pittsburgh, USA
- Implemented server-side object detection and model training services employing the Discriminatively Trained Deformable Part Based Models technique
  - Developed algorithms to detect and track giraffes in a video feed from one of Disney's resorts
- May'12 - May'13 **New Technology Analyst - Next Generation Experience Project**  
Walt Disney World Parks & Resorts, Orlando, USA
- Prototyped techniques for color constancy of images captured under non-uniform illumination
  - Integrated techniques for automating color retargetting of high speed video into the existing guest media capture pipeline within the theme parks
- Jan'12 - May'12 **Developer - Project Wall# (Semester Project)**  
Microsoft - User Experience and Creative Services, Seattle, USA
- Developed an interactive projection mapping installation prototype for the Microsoft Store front using the Kinect and Unity3D
  - Implemented shaders for native homographic correction for projection mapping within Unity3D

- Jul'10 - Jul'11 **Developer - iOS Games and Interactive Installations**  
Hungama Digital Media Entertainment Pvt. Ltd., Mumbai, India  
Notable Projects:
- **Toon Football Striker Practice**  
Implemented an iPhone game developed for Turner Broadcasting System, Inc. using Cocos 2D and OpenGL ES
  - **Interactive Wall Installation - Axis Bank Lobby**  
Implemented a gesture recognition module using the Kinect and OpenFrameworks
  - **Music Box - Speech Recognition**  
Implemented a speech-driven iOS application using CMUSphinx OpenEars
- Jun'11 - Aug'11 **Project Engineer - Project OSCAR**  
Jul'08 - Jun'11 **Research Intern - Project OSCAR**  
Indian Institute of Technology - Bombay, Mumbai, India  
Project OSCAR (Open Source Computer Animation Repository) was a part of the National Mission on Education funded by the Ministry of Human Resources Development, Govt. of India.  
Website: <http://oscar.iitb.ac.in>  
Research Projects:
- **Interactive Simulation of the Vapor Liquid Equilibrium experiment**  
Prototyped interactions using the Blender Game Engine to add interactivity to an illustrative animation of the experiment  
*Associated paper:* Sahasrabudhe, S. & Iyer, S. (2009). "Creating 3D Animations of laboratory experiments using open source tools". International Conference on e-Learning, Toronto, Canada  
*Associated presentation:* Sahasrabudhe, S. (2009). "Application of Blender 3D for e-Learning content creation", Blender Conference, Amsterdam, Netherlands
  - **Designing and building an interactive content creation tool**  
Programmed a stand-alone tool using the Blender Game Engine to enable educators to create interactive content for their courses. Demonstrated use by an illustrative example of virtually assembling a car
  - **Adding Interactivity to e-Learning using Gesture Recognition**  
Mentored a team of six students on building a data glove as an input mechanism to perform experiments virtually using the Blender Game Engine, intended to be deployed in rural schools

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## HONORS & AWARDS

- 2012 To Innovation And Beyond, Walt Disney World New Media Group  
· Award given for prototyping effective new ideas for media capture within the theme parks
- 2011 The Award of First Penguin, Entertainment Technology Center, Carnegie Mellon  
· Introduced by Randy Pausch, the award acknowledges the courage of the team that took the biggest risk at achieving their goal in the Building Virtual Worlds course  
K.C. Mahindra Scholarship for post-graduate studies  
Bharat Petroleum Corporation Scholarship for higher studies  
Award for Excellence in Innovation, Hungama Digital Media Pvt. Ltd.
- 2009, 2010 Sir Dorabji Tata Trust Scholarship for excellence in undergraduate studies
- 2004 Prakriti Suri and Sumair Suri Award for best all-round high school student
- 2001 3rd National Science Olympiad Merit Holder : All India Rank - 82

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## REFEREED PUBLICATIONS

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- 2017 P01. **Integrating Verbal and Nonverbal Input into a Dynamic Response Spoken Dialogue System**  
Ting-Yao Hu, **Chirag Raman**, Salvador Medina Maza, Liangke Gui, Tadas Baltrusaitis, Robert Frederking,  
Louis-Philippe Morency, Alan W Black, Maxine Eskenazi  
AAAI 2017

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## TEACHING EXPERIENCE

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- Instructor **Game Architecture and Programming (Co-instructor)**  
D.J.Sanghvi College of Engineering, University of Mumbai, Mumbai, India

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## SERVICE

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- Tutorials / Training **Online tutorials - Introduction to Blender 3D, Project OSCAR. 2011.**  
Indian Institute of Technology Bombay, Mumbai, India  
· Link: <http://oscar.iitb.ac.in/blendertutorials.do>
- Workshop - Introduction to Blender 3D. 2011.**  
D.J.Sanghvi College of Engineering, University of Mumbai, Mumbai, India
- Technical Reviewer **Unity 4 Game Development HOTSHOT. 2013-2014.**  
Packt Publishing
- Jury **Building Virtual Worlds Festival. 2013.**  
Entertainment Technology Center, Carnegie Mellon University
- Student Volunteer **SIGGRAPH 2012**
- Sponsorship Head **Parichay (Annual college festival). 2008, 2009.**  
D.J.Sanghvi College of Engineering, University of Mumbai, Mumbai, India

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## SELECTED PRESS

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- ProductionPro **New York Business Journal.** ProductionPro wins Demo Day at Brooklyn's Made in NY Media Center. Oct 2015.
- Project OSCAR **Hindustan Times.** Project OSCAR - Animation to make engineering lessons easier, more fun. 2009.