

## Rahul Garg

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Over 15 years of experience in computer vision with a proven track record of converting cutting-edge research to delightful user products and features.

**Research Interests:** Computational photography, image processing, image based rendering, 3D computer vision.

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## Experience

- **Research Scientist at Google** **Oct'13 - Present**
    - **Staff Research Scientist and Manager at Google Labs** **Mar'21 - Present**

Computer vision and ML to improve videoconferencing. Grew a 15 person team, mentored team members, fostered cross-team relationships, led ideation, prototyping, and productization to build features, many of which were launched at CloudNext'23, e.g., [Studio Look](#) and [Dynamic Tiles](#).
    - **Staff Research Scientist at GCam, Google Research** **Jan'17 - Mar'21**

Pioneered cutting-edge computational photography for Google Pixel phones and Google Photos, including [Portrait Mode](#) for single and dual-camera phones, [Portrait Blur](#) for Google Photos, Auto-focus for Nightsight, and Magic Eraser. These were highlighted in [Pixel ads](#) and made it the top performing smartphone camera for several years in a row.
    - **Senior Research Scientist at Daydream (VR/AR), Google** **June'15 - Jan '17**

Co-founded hand-tracking team and built real-time hand segmentation and tracking using CNNs.
    - **Research Scientist at Google Research** **Oct'13 - June '15**

Built real-time hand gesture detection for Google Meet (Hangouts).
  - **Research Engineer at [Flutter](#) (Acquired by Google)** **April'12 - Oct'13**

Startup building low-power real-time hand gesture recognition(Mac app rated 4.5+, among Apple's Best Apps of 2012), one of the first employees. Sped up recognition by 10×, automated training data collection, co-invented new state of the art image feature, developed desktop apps, mobile apps, and browser extensions.
  - **Software Engineering Intern at Google Seattle** **Mar'10 - Sep'10, June'11 - Sep'11**

Successfully implemented and launched the [Face Movie](#) feature for Picasa as an intern, receiving widespread press coverage and 1.5M+ [YouTube](#) views. Published at SIGGRAPH and 3DV.
  - **Research Intern at Microsoft Research** **June'08 - Sep'08, May'06 - July'06**

Conducted research on feature matching, 3D reconstruction, and texture classification. Published at ICCV.
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## Education

- **University of Washington, Seattle, WA** **2007 - 2012**

*Ph.D. in Computer Science and Engineering*  
**Advisor:** Prof. Steven M. Seitz
- **Indian Institute of Technology (IIT) Delhi, India** **2003 - 2007**

*Bachelor of Technology in Computer Science and Engineering*  
**GPA: 9.91/10.0, President's Gold Medal**  
Highest GPA amongst all outgoing B.Tech. students across all majors  
**All India Rank 7** among 172000 candidates in IIT-Joint Entrance Exam. 2003

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## Honors and Awards

- Publications at top-tier vision and graphics conferences (CVPR, SIGGRAPH, ICCV, ECCV). 10+ patents.
- Fellowships: NVIDIA Fellowship (2009-10), Clairmont L. Egtvedt Fellowship (2007-08), Weil Family Endowed Fellowship (2007-08), NTSE Scholarship by Govt. of India (2001).
- Programming Contests: **Top 12** in TopCoder Open 2008 Marathon competition (**international** event), **Top 50** in Google Code Jam India 2006

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## Selected Publications

- Y. Zhang, N. Wadhwa, S. Orts-Escolano, C. Häne, S. Fanello, R. Garg, **Du<sup>2</sup>Net: Learning Depth Estimation from Dual-Cameras and Dual-Pixels**, *ECCV*, 2020. ([Oral. Basis for Portrait Mode on Pixel 4.](#))
- C. Herrmann, R. S. Bowen, N. Wadhwa, R. Garg, Q. He, J.T. Barron, R. Zabih, **Learning to Autofocus**, *CVPR*, 2020. ([Basis for low light autofocus on Pixel 5](#))
- R. Garg, N. Wadhwa, S. Ansari, J.T. Barron, **Learning Single Camera Depth Estimation using Dual-Pixels**, *ICCV*, 2019. ([Oral. Basis for Portrait Mode on Pixel 3.](#))
- S. Ansari, N. Wadhwa, R. Garg, J. Chen, **Wireless Software Synchronization of Multiple Distributed Cameras**, *ICCP*, 2019. ([Used for training data collection for various Pixel features.](#))
- N. Wadhwa, R. Garg, D.E. Jacobs, B.E. Feldman, N. Kanazawa, R. Carroll, Y. Movshovitz-Attias, J.T. Barron, Y. Pritch, M. Levoy, **Synthetic Depth-of-Field with a Single-Camera Mobile Phone.**, *SIGGRAPH*, 2018. ([Basis for Portrait Mode on Pixel 2.](#))
- I. Kemelmacher-Shlizerman, E. Shechtman, R. Garg and S.M. Seitz. **Exploring Photobios**, *SIGGRAPH*, 2011. Featured on SIGGRAPH cover. ([Basis for Google Picasa Face Movies feature.](#))
- N. Snavely, R. Garg, S.M. Seitz and R. Szeliski. **Finding Paths through the World's Photos**, *SIGGRAPH*, 2008. ([Basis for new features in Microsoft's Photosynth.](#))

Complete list on [Google Scholar](#).

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