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.

Experience

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

    Using Computer Vision / ML / Generative AI to improve videos for Google Meet and YouTube. Grew a 15 person team, mentored team members, fostered cross-team relationships, led ideation, prototyping, and productization to build features. Some of the launched features include 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 Nighsight, 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.

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

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

Selected Publications

- Y. Zhang, N. Wadhwa, S. Orts-Escolano, C. Häne, S. Fanello, R. Garg, **Du^{2}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.