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| Gaurav Bharaj | **Email**: [gaurav.bharaj@gmail.com](mailto:gaurav.bharaj@gmail.com) |
| **Website**: http://www.gauravbharaj.com |

# SUMMARY

I am a computer vision, and graphics researcher and engineer. I build tools to solve challenging visual computing problems through mathematical modeling, machine learning, and numerical optimization.

# EDUCATION

**Harvard University**, Cambridge, MA

Ph.D. in Computer Science, Nov 2017

Advisor: Prof. Hanspeter Pfister

Thesis: Methods in Computational Design and Optimization

**University of Pennsylvania**, Philadelphia, PA

M.S. in Computer Science, May 2010

Concentrations: Computer Graphics and Game Technology

**Punjabi University**, Patiala, INDIA

B.Tech. in Computer Science, May 2007

# WORK EXPERIENCE

**Technicolor**,New York, NY

Senior Researcher, Imaging Science Laboratory, Dec 2017 – Present

*Developed a 3D face reconstruction and tracking tool from image/video data and co-lead a team of six PhD researchers, defining project goals, and technical direction. Maintained academic collaboration with MPI Informatics, Germany, publishing and pushing state-of-the-art technologies. Mentored MS and PhD students on computer vision and deep learning projects.*

**Intel Sports**, Santa Clara, CA

Computer Vision and Graphics Intern, June 2017 – Aug 2017

**Adobe Research**, Seattle, WA

Research Intern, Creative Technologies Laboratory, June 2016 – Aug 2016

**Disney Research**, Zürich, CH

Research Intern, June 2013 – Aug 2013

**Max-Planck Institute for Informatics**, Saarbrücken, DE

Research Engineer, Computer Graphics Department, Aug 2010 – Aug 2012

*Worked on 3D human shape/pose reconstruction research projects and build software tools for the multiview video data lab.*

**STMicroelectronics**, Noida, IND

Software Intern, Jan 2007 – July 2007

# PUBLICATIONS

## Journals and Conferences

1. FML: Face Model Learning from Videos

Ayush Tewari, Florian Bernard, Pablo Garrido, **Gaurav Bharaj**, Mohamed Elgharib, Hans-Peter Seidel, Patrick Pérez, Michael Zollhöfer, and Christian Theobalt

*In Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019* ***(Oral)***

1. Metamorphs: Computational Design of Example-based Shape Forms

**Gaurav Bharaj**, Danny Kaufman, Etienne Vouga, and Hanspeter Pfister

*arXiv, 2018*

1. Methods in Computational Design and Optimization

**Gaurav Bharaj**

*Ph.D. Thesis, 2017*

1. Computational Design of Metallophone Contact Sounds

**Gaurav Bharaj**, David Levin, James Tompkin, Yun Fei, Hanspeter Pfister, Wojciech Matusik, and Changxi Zheng

*ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2015*

1. Computational Design of Walking Automata

**Gaurav Bharaj**, Stelian Coros, Bernhard Thomaszewski, James Tompkin, Bernd Bickel, and Hanspeter Pfister

*ACM SIGGRAPH/EUROGRAPHICS Proc. Symposium on Computer Animation (SCA), 2015*

1. Personalization and Evaluation of a Real-time Depth-based Full Body Tracker

Thomas Helten, Andreas Baak, **Gaurav Bharaj**, Meinard Müller, Hans-Peter Seidel, and Christian Theobalt

*In Proc. International Conference on 3D Vision (3DV), 2013*

1. Automatically Rigging Multi-Component Characters

**Gaurav Bharaj**, Thorsten Thormählen, Hans-Peter Seidel, and Christian Theobalt

*Computer Graphics Forum, European Association Computer Graphics (EUROGRAPHICS), 2012*

1. A Data-Driven Approach for Real-Time Full Body Pose Reconstruction from a Depth Camera

Andreas Baak, Meinard Müller, **Gaurav Bharaj**, Hans-Peter Seidel, and Christian Theobalt

*In Proc. International Conference on Computer Vision (ICCV), 2011*

1. Video-based Characters - Creating New Human Performances from a Multi-view Video Database

Feng Xu, Yebin Liu, Carsten Stoll, James Tompkin, **Gaurav Bharaj**, Qionghai Dai, Hans-Peter Seidel, Jan Kautz, and Christian Theobalt

*ACM Transactions on Graphics (Proc. SIGGRAPH), 2011*

## Book Chapter

1. A Data-driven Approach for Real-time Full Body Pose Reconstruction from a Depth Camera

Thomas Helten, Andreas Baak, **Gaurav Bharaj**, Meinard Müller, Hans-Peter Seidel, and Christian Theobalt

*Consumer Depth Cameras for Computer Vision, 2013*

## Patents

1. Walking Machines

Bernd Bickel, **Gaurav Bharaj**, Bernhard Thomaszewski, and Stelian Coros

*US Patent, 2014*

# ACADEMIC EXPERIENCE

**Massachusetts Institute of Technology**, Cambridge, MA

Visiting Research Fellow, May 2014 **–** Aug2014

**Harvard University**, Cambridge, MA

Teaching Fellow, Computer Vision, Sep 2017 – Dec 2017

Teaching Fellow, Visualization, Jan 2013 – April 2013

**University of Pennsylvania**, Philadelphia, PA

Research Fellow, Jan 2009 – April 2009

# AWARDS AND HONORS

Outstanding Reviewer, Computers & Graphics Journal, Elsevier, Amsterdam, 2017

Granted the prestigious Siebel Scholarship, 2016 - 2017

Granted the Amartya Sen Fellowship for Students from India, 2012 – 2013

# MENTORING

Christopher Aykroyd, École Polytechnique, 2019

Ayush Tewari, Max-Plank Institute for Informatics, 2018-19

# PROFESSIONAL ACTIVITIES

## Reviewer

ACM SIGGRAPH, ACM SIGGAPH Asia, Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV), Computer Graphics Forum (EUROGRAPHICS), International Journal of Robotics Research, Scientific Instruments