

# Shruti Agarwal

---

CONTACT INFORMATION	+1(401)651-7667 shruti.agarwal@berkeley.edu <a href="https://agarwalshruti15.github.io/webpage/">https://agarwalshruti15.github.io/webpage/</a>	
RESEARCH INTERESTS	Multimedia Forensics, Image Analysis, Machine Learning and Computer Vision.	
EDUCATION	<b>University of California at Berkeley (UCB)</b> , Berkeley, California USA	<b>2018 - present</b>
	Ph.D., Computer Science (expected graduation: 2021) <ul style="list-style-type: none"><li>• Advisor: Prof. Hany Farid</li></ul>	
	<b>Dartmouth College</b> , Hanover, New Hampshire USA	<b>2015 - 2018</b>
	Ph.D., Computer Science (transferred to UCB) <ul style="list-style-type: none"><li>• Advisor: Prof. Hany Farid</li></ul>	
	<b>Indian Institute of Technology Delhi (IIT Delhi)</b> , Delhi, India	<b>2010 - 2012</b>
	M. Tech., Computer Science; CGPA: 9.5/10.0 <ul style="list-style-type: none"><li>• Thesis: A New Consistency Measure using Shape from Shading (SFS) for Dense 3D Reconstruction Paradigm.</li><li>• Advisor: Prof. Subhashis Banerjee and Prof. Prem Kalra</li></ul>	
	<b>Harcourt Butler Technological Institute</b> , Kanpur, India	<b>2006 - 2010</b>
	B.Tech., Computer Science; Percentage: 79.92%	
PUBLICATIONS	<b>S. Agarwal</b> , H. Farid, Y. Gu, M. He, K. Nagano, and H. Li. Protecting World Leaders Against Deep Fakes, Workshop on Media Forensics at CVPR, Long Beach, CA, 2019. ( <a href="#">pdf</a> )	
	B. Lorch, <b>S. Agarwal</b> , and H. Farid. Forensic Reconstruction of Severely Degraded License Plates, IS&T Electronic Imaging, San Francisco, CA, 2019. ( <a href="#">pdf</a> )	
	W. Fan, <b>S. Agarwal</b> , and H. Farid. Rebroadcast Attacks: Defenses, Reattacks, and Redefenses, European Signal Processing Conference (EUSIPCO), Rome, Italy, 2018. ( <a href="#">pdf</a> )	
	<b>S. Agarwal</b> , W. Fan, and H. Farid. A Diverse Large-Scale Dataset for Evaluating Rebroadcast Attacks. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Calgary, Alberta, Canada, 2018. ( <a href="#">pdf</a> )	
	<b>S. Agarwal</b> and H. Farid. A JPEG Corner Artifact from Directed Rounding of DCT Coefficients. TR2018-838, Department of Computer Science, Dartmouth College, 2018. ( <a href="#">pdf</a> )	
	<b>S. Agarwal</b> and H. Farid. Photo forensics from JPEG dimples. 2017 IEEE Workshop on Information Forensics and Security (WIFS), Rennes, 2017, pp. 1-6. ( <a href="#">pdf</a> )	
	<b>S. Agarwal</b> , D. Tran, L. Torresani and H. Farid. Deciphering Severely Degraded License Plates, IS&T Electronic Imaging, San Francisco, CA, 2017, pp. 138-143(6). ( <a href="#">pdf</a> )	
IN THE NEWS (SELECTED)	Moments of untruth: Using technology to expose digital deception, Berkeley Engineering, 10.15.19	

Race to defuse deepfake videos: UC Berkeley researchers creating software for newsrooms, abc7, 07.08.19

UC Berkeley researchers develop technique for detecting AI video simulations, The Daily California, 07.05.19

The fight to stay ahead of deepfake videos before the 2020 US election, CNN Business, 06.12.19

Researchers use facial quirks to unmask 'deepfakes', Berkeley News, 06.18.19

#### INVITED TALKS

Creating, Weaponizing, and Detecting Deep Fakes at Digital Humans and Deep Fakes: Creative Promise and Peril, SMPTE Hollywood section, 11.19

Creating, Weaponizing, and Detecting Deep Fakes at Fall UC Cyber Security Summit, 10.19

Creating, Weaponizing, and Detecting Deep Fakes at Vision Industry and Technology Forum, Embedded Vision Alliance, Santa Clara, 09.19

Creating, Weaponizing, and Detecting Deep Fakes at Deepfake Workshop, Microsoft, Redmond, 09.19

#### SKILLS

##### **Machine Learning and Computer Vision**

PyTorch, Keras, Caffe, Pandas, OpenCV, OpenFace

##### **Languages**

Python, MATLAB, C++, HTML

##### **Tools**

Photoshop, Illustrator, Linux Shell, LaTeX

#### PROFESSIONAL EXPERIENCE

**Adobe Systems India Private Limited**, Noida, India

**2012 - 2015**

*Member of Technical Staff (MTS II), Adobe Illustrator*

My role involved algorithm designing, coding, technical brainstorming and technical designing. Main contributions were towards development of touch optimized workspace and Live Corner features in Adobe Illustrator.

<https://helpx.adobe.com/illustrator/how-to/draw-touch-environment.html>

<https://helpx.adobe.com/illustrator/how-to/live-corners-in-illustrator.html>

#### ACADEMIC EXPERIENCE

**Dartmouth College**, Hanover, New Hampshire USA

**2015 - 2016**

*Teaching Assistant (TA)*

Introduction to Programming and Computation (CS 1) Fall 2015, CS 1 Winter 2016, and Numerical and Computational Tools for Applied Science (CS 70/170) Spring 2016. Duties included office hours, grading and leading weekly computer lab exercises.

**IIT Delhi**, Delhi, India

**2010 - 2012**

*Teaching Assistant (TA)*

Introduction to Digital Image Processing, Introduction to Logic Programming and Introduction to Computer Network courses. I helped in evaluating student assignments and exam papers.

CONFERENCE  
PRESENTATIONS

S. Agarwal, H. Farid, Y. Gu, M. He, K. Nagano, and H. Li. “Protecting World Leaders Against Deep Fakes” in Workshop on Media Forensics at CVPR, CA, USA, July 2019.

W. Fan, S. Agarwal, and H. Farid. “Rebroadcast Attacks: Defenses, Reattacks, and Redefenses” in European Signal Processing Conference (EUSIPCO), Rome, Italy, September 2018.

S. Agarwal, W. Fan, and H. Farid. “A Diverse Large-Scale Dataset for Evaluating Rebroadcast Attacks” in IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Calgary, Alberta, Canada, April 2018.

S. Agarwal and H. Farid. “Photo forensics from JPEG dimples” in 2017 IEEE Workshop on Information Forensics and Security (WIFS), Rennes, December 2017.

S. Agarwal, D. Tran, L. Torresani and H. Farid. “Deciphering Severely Degraded License Plates” in Electronic Imaging, Media Watermarking, Security, and Forensics, CA, USA, February 2017.

HONORS AND  
AWARDS

Winner of the Dartmouth Rendering Competition 2018.

Best Poster Award, Computer Science Research Symposium, Dartmouth College, 2016.

MHRD (Ministry of Human Resource Development, Government of India) Scholarship towards master’s degree, 2010-2012.