

Hany Farid

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APPOINTMENTS	Dartmouth College, Department of Computer Science <i>Albert Bradley 1915 Third Century Professor</i> <i>Department Chair</i> <i>Professor</i> <i>William H. Neukom 1964 Distinguished Professor of Computational Science</i> <i>David T. McLaughlin Distinguished Professor of Computer Science</i> <i>Professor</i> <i>Associate Professor</i> <i>Assistant Professor</i> Dartmouth College, Tuck School of Business <i>Adjunct Professor of Business Administration</i> Counter Extremism Project <i>Senior Adviser</i> Fourandsix Technologies, Inc. <i>Chief Technology Officer and Co-founder</i> Stanford University <i>Visiting Professor</i> University of California, Berkeley <i>Visiting Professor</i> Dartmouth College, Neukom Institute for Computational Science <i>Director</i>	1999 – present <i>2016 – present</i> <i>2015 – present</i> <i>2011 – 2016</i> <i>2008 – 2011</i> <i>2007 – 2008</i> <i>2006 – 2007</i> <i>2004 – 2006</i> <i>1999 – 2004</i> 2016 – present 2016 – present 2011 – present 2012 – 2014 2010 – 2012 2008 – 2011
EDUCATION	Massachusetts Institute of Technology <i>Postdoctoral Fellow, Brain and Cognitive Sciences (adviser: Ted Adelson)</i> University of Pennsylvania <i>Ph.D., Computer Science (adviser: Eero Simoncelli)</i> State University of New York at Albany <i>M.S., Computer Science</i> University of Rochester <i>B.S., Computer Science with Applied Mathematics</i>	1997 – 1999 1993 – 1997 1990 – 1992 1984 – 1988
AWARDS	National Academy of Inventors (NAI), Fellow, 2016 University at Albany Excellence in Science and Technology Award, 2010 John Simon Guggenheim Fellowship, 2006 Alfred P. Sloan Fellowship, 2002	
FUNDING	DARPA. <i>Photons, Pixels, Photoshop and the Internet</i> , (929K), Co-PI, 2016 National Institute of Justice. <i>Degrade It</i> , (124K), 2016 Microsoft Corp. <i>Combating On-line Extremism</i> , 2016 NVIDIA Corp. <i>How Realistic is Photorealistic?</i> , (Equipment Grant), 2015 National Science Foundation. <i>GridIron</i> (474K), Co-PI, 2012 National Science Foundation. <i>Instrument Development for Biological Research</i> (212K), Co-PI, 2008 National Science Foundation. <i>Digital Imaging Laboratory at Dartmouth</i> (427K), 2007 Department of Homeland Security. <i>Digital Video Forensics</i> (255K), 2007 Howard Hughes Medical Institute. <i>Undergraduate Science Education</i> (1.5M), Co-PI, 2006 United States Air Force. <i>Digital Image Forensics</i> (380K), 2006 National Science Foundation. <i>The Evolution of Mate Choice in Damselflies</i> (535K), Co-PI, 2005 Bureau of Justice Assistance. <i>Digital Image Forensics</i> (125K), 2005 Microsoft Corp. (375K), 2005, 2006, 2007, 2009, 2016 Adobe Systems, Inc. (110K), 2004, 2006, 2008 National Institute of Justice. <i>Digital Tampering and Secrets</i> (690K), 2003 National Institute of Justice. <i>Detecting Digital Tampering</i> (250K), 2000 National Science Foundation. <i>CAREER: Mixing and Separating Digital Images</i> (315K), 2000	

- PUBLICATIONS (IMPACT) h -index=55; total citations=12,845; i500-index=5; i250-index=13; i100-index=37; i10-index=97.¹
- PUBLICATIONS (BOOK) H. Farid. Photo Forensics, MIT Press, 2016.
- PUBLICATIONS (JOURNAL) H. Farid. Reining in Online Abuses. *Technology and Innovation*, 2018 (in press).
- J. Dressel and H. Farid. The Accuracy, Fairness, and Limits of Predicting Recidivism, *Science Advances*, 4(1):eaao5580, 2018.
- B. Mader, M.S. Banks, and H. Farid. Identifying Computer-Generated Portraits: The Importance of Training and Incentives. *Perception*, 46(9):1062-1076, 2017.
- K. Greenham, P. Lou, J.R. Puzey, G. Kumar, C. Arnevik, H. Farid, J. H. Willis, and C.R McClung. Geographic Variation of Plant Circadian Clock Function in Natural and Agricultural Settings. *Journal of Biological Rhythms*, 32(1):26-34, 2016.
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- E.A. Cooper and H. Farid. Does the Sun Revolve Around the Earth? A Comparison between the General Public and On-line Survey Respondents in Basic Scientific Knowledge. *Public Understanding of Science*, 25(2):146-153, 2016.
- S. Pittala, E. Whiting, and H. Farid. A 3-D Stability Analysis of Lee Harvey Oswald in the Backyard Photo. *Journal of Digital Forensics, Security and Law*, 10(3):87-98, 2015.
- K. Greenham, P. Lou, S. E. Remsen, H. Farid, and C.R McClung. TRiP: Tracking Rhythms in Plants, an automated leaf movement analysis program for circadian period estimation. *Plant Methods*, 11(33):1-11, 2015.
- E. Kee, J. O'Brien, and H. Farid. Exposing Photo Manipulation from Shading and Shadows. *ACM Transactions on Graphics*, 33(5):165:1-165:21, 2014.
- M. Bravo and H. Farid. Informative Cues Can Slow Search: The cost of matching a specific template. *Perception*, 76(1):32-39, 2014.
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- D.T. Bolger, T.A. Morrison, B. Vance, D. Lee, and H. Farid. A Computer-Assisted System for Photographic Mark-Recapture Analysis. *Methods in Ecology and Evolution*, 3(5):813-822, 2012.
- J. O'Brien and H. Farid. Exposing Photo Manipulation with Inconsistent Reflections. *ACM Transactions on Graphics*, 31(1):4:1-4:11, 2012 (presented at SIGGRAPH).
- H. Farid and M.J. Bravo. Perceptual Discrimination of Computer Generated and Photographic Faces. *Digital Investigation*, 8:226-235, 2012.
- M.J. Bravo and H. Farid. Task Demands Determine the Specificity of the Search Template. *Attention, Perception, & Psychophysics*, 74(1):124-131, 2012.

¹ h -index = largest number h such that h publications have at least h citations; iN -index = number of publications with at least N citations. Citation counts according to GoogleScholar as of February 2018.

- V. Conotter, J. O'Brien, and H. Farid. Exposing Digital Forgeries in Ballistic Motion. *IEEE Transactions on Information Forensics and Security*, 7(1):283-296, 2012.
- E. Kee and H. Farid. A Perceptual Metric for Photo Retouching. *Proceedings of the National Academy of Sciences*, 108(50):19907-19912, 2011.
- E. Kee, M. K. Johnson, and H. Farid. Digital Image Authentication from JPEG Headers. *IEEE Transactions on Information Forensics and Security*, 6(3):1066-1075, 2011.
- H. Farid. The Lee Harvey Oswald Backyard Photos: Real or Fake? *Perception*, 38(11):1731-1734, 2009.
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- L. Shen, H. Farid and M.A. McPeck. Modeling 3-Dimensional Morphological Structures using Spherical Harmonics. *Evolution*, 63(4):1003-1016, 2009.
- H. Farid. Exposing Digital Forgeries from JPEG Ghosts. *IEEE Transactions on Information Forensics and Security*, 4(1):154-160, 2009.
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- S. Lyu and H. Farid. Steganalysis Using Higher-Order Image Statistics. *IEEE Transactions on Information Forensics and Security*, (1)1:111-119, 2006. **[IEEE SPS Best Paper Award, 2010]**
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- H. Farid and E.H. Adelson. Synchrony Does Not Promote Grouping in Temporally Structured Displays. *Nature Neuroscience*, 4(9):875-876, 2001.
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X. Jiang, H. Farid, E. Pistor and R. S. Farid. A New Approach to the Design of Uniquely Folded Thermally Stable Proteins. *Protein Science*, 9:403-416, 2000.

E.H. Adelson and H. Farid. Filtering Reveals Form in Temporally Structured Displays. *Science*, 286:2231, 1999.

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S. Agarwal and H. Farid. Photo Forensics from JPEG Dimples. *IEEE Workshop on Image Forensics and Security*, Rennes, France, 2017.

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E. Kee and H. Farid. Exposing Digital Forgeries from 3-D Lighting Environments. *IEEE Workshop*

on *Information Forensics and Security*, Seattle, WA, 2010.

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M.K. Johnson and H. Farid. Exposing Digital Forgeries Through Chromatic Aberration. *ACM Multimedia and Security Workshop*, Geneva, Switzerland, 2006.

M.K. Johnson and H. Farid. Exposing Digital Forgeries by Detecting Inconsistencies in Lighting. *ACM Multimedia and Security Workshop*, New York, NY, 2005.

S. Lyu, D. Rockmore, and H. Farid. Wavelet Analysis for Authentication. *Art + Math = X*, Boulder, CO, 2005.

J.E. Dobson, J.B. Woodward, S.A. Schwarz, J.C. Marchesini, H. Farid, and S.W. Smith. The Dartmouth Green Grid. *Workshop on High Performance Computing in Academia (in conjunction with International Conference on Computational Science)*, Atlanta, GA, 2005.

M.K. Johnson, S. Lyu and H. Farid. Steganalysis in Recorded Speech. *SPIE Symposium on Electronic Imaging*, San Jose, CA, 2005.

A.C. Popescu and H. Farid. Statistical Tools for Digital Forensics. *6th International Workshop on Information Hiding*, Toronto, CA, 2004.

S. Lyu and H. Farid. Steganalysis Using Color Wavelet Statistics and One-Class Support Vector Machines. *SPIE Symposium on Electronic Imaging*, San Jose, CA, 2004.

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- J. Ford, H. Farid, F. Makedon, L.A. Flashman, T.W. McAllister, V. Megalooikonomou, and A.J. Saykin. Patient Classification of fMRI Activation Maps. *Medical Image Computing & Computer Assisted Intervention (MICCAI)*, Montreal, Canada, 2003.
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ABSTRACT)

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- H. Farid and M.J. Bravo. Photo Forensics: How Reliable is the Visual System? *Vision Sciences*, Naples, FL, 2010.
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M.J. Bravo and H. Farid. Searching a Cluttered Scene. *Vision Sciences*, Sarasota, FL, 2003.

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INVITED TALKS

Reining in Online Abuses, *Plymouth State University*, 3.18
 Photo Forensics, *University of Pennsylvania*, 12.17
 Reining in Online Abuses, *Building Alliances - Preventing Terror*, Brussels Belgium, 10.17
 Reining in Online Abuses, *SUNY Albany, Massry Lecture*, 9.17
 Photo Forensics, *University of California, Berkeley*, 9.17
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 Photographs, Hoaxes, and Conspiracies, *Gordon Conference: Visualization in Science & Education*, 7.17
 Photo Forensics from JPEG Coding Artifacts, *Media Forensics Workshop at CVPR (keynote)*, 7.17
 Digital Video Forensics, *The Federal Judiciary Center*, 6.17
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Digital Forensics: From Social Media to Social Impact, *National Academy of Inventors*, 4.17
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Photo Forensics, *International Center of Photography*, 12.16
Photo Forensics, *Columbia University*, 12.16
Combating On-line Extremism, *United Nations*, 11.16
Photo Forensics from Lighting and Shadows, *Duke University*, 3.16
How Realistic is Photorealistic?, *Duke University*, 3.16
Photo Forensics, *Middlebury College*, 10.15
Photo Forensics and Verification, *TechRaking at MIT*, 9.15
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Image Manipulation in News, *Computation + Journalism Symposium*, 2.13
Digital Forensics, *The World Bank*, 6.12
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Photo Forensics, *Stanford University*, 1.12
Ethics and Forensics in the Age of Photoshop Photojournalism, *Massachusetts Institute of Technology*, 4.11
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Limitations of Visually-Based Image Forensics, *Massachusetts Institute of Technology*, 4.10
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Digital Forensics, *Biometrics: Theory, Applications and Systems (keynote)*, 9.09
Digital Tampering and Forensics, *University of California, San Diego*, 4.09
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Estimating and Modeling Complex Lighting Environments, *University of Pennsylvania*, 10.08
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A Digital Technique for Art Authentication, *Harvard University Art Museum*, 10.07
Digital Image Forensics, *Google*, 4.07
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Exposing Digital Forgeries from Inconsistencies in Lighting, *Carnegie Mellon University*, 3.07
Digital Forensics, *American Association for the Advancement of Science*, 2.07
Digital Image Forensics, *The Associated Press*, 2.07
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Digital Tampering in the Media, Politics and Law, *University of Pennsylvania*, 2.07
Digital Image Forensics, *Central Intelligence Agency*, 12.06
From Photons to Pixels to Photoshop, *Project Safe Childhood Conference*, 12.06
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 A Picture is Worth a Thousand Lies, *Dartmouth College*, 2.06
 Digital Image Forensics, *Ricoh Innovations*, 11.05
 Energy vs. Synchrony in Perceptual Grouping, *University of California, San Diego*, 11.05
 From Photons to Pixels to Photoshop, *Delaware Department of Justice*, 9.05
 From Photons to Pixels to Photoshop, *High Tech. Crime Investigation Assoc.*, 8.05
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 Reconstructing Ancient Egyptian Tombs, *Society for Imaging Science and Tech.*, 10.04
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 Digital Tampering, *Washington University, St. Louis*, 1.02
 Digital Secrets, *Boston University*, 12.01
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 Blind Removal of Image Non-Linearities, *Columbia University*, 11.01
 Blind Removal of Image Non-Linearities, *Massachusetts Institute of Technology*, 10.01
 Grouping by Temporal Synchrony, *New York University*, 10.01
 Grouping by Temporal Synchrony, *Massachusetts Institute of Technology*, 3.01
 Grouping by Temporal Synchrony, *University of Pennsylvania*, 3.01
 Grouping by Temporal Synchrony, *Boston University*, 2.01
 Blind Removal of Image Non-Linearities, *University of Pennsylvania*, 3.00
 Digital Image Separation, *George Mason University*, 3.00
 Grouping in Temporally Synchronous Displays, *Dartmouth College*, 12.99
 Separating Digital Images, *Brooklyn Polytechnic University*, 3.99
 Separating Digital Images, *Dartmouth College*, 3.99
 ICA for Separating Images, *Massachusetts Institute of Technology*, 2.99
 Separating Images, *University of Pennsylvania*, 10.98
 Monocular Stereo, *Polaroid Inc*, 7.98
 Digital Image Enhancement, *Williams College*, 4.98
 Monocular Stereo, *Massachusetts Institute of Technology*, 3.98
 Range Estimation by Optical Differentiation, *University of California, Berkeley*, 3.97
 A Differential Optical Range Camera, *Sensar Inc.*, 11.96
 Direct Differential Range Estimation, *Columbia University*, 5.96
 Steerable Filters for Low-level Image Processing, *SUNY Albany*, 11.95
 3-D Scene Reconstruction for Telepresence, *UNC, Chapel Hill*, 6.94

MENTOR

Summer Robot Camp, *Dartmouth College*, 2004-2007
 Gates Millennium Scholarship, *Dartmouth College*, 2000

Mellon Minority Scholarship, Dartmouth College, 2000
Math Circle/Math Camp, 1998-2001, 2004
NASA Quality Education for Minorities, U. of Penn, 1995-1996
Philadelphia Math and Science Outreach, U. of Penn, 1994-1996

PROFESSIONAL
ACTIVITIES

IEEE Fellow, 2018
Phi Beta Kappa (honorary), 2017

ASSOCIATE
EDITOR

IEEE Transactions on Information Forensics and Security, 2005-2008

PROGRAM
COMMITTEE

Workshop on Image Forensics, CVPR, 2017
IEEE Workshop on Image Forensics (WIFS), 2017
International Conference on Computational Photography, 2012-2015
Information Hiding, 2010
Media Security and Forensics (Electronic Imaging), 2009-2011
Technical Advisory Board for Berkman's Internet Safety Task Force, 2008
Vision of the Unseen (CVPR Workshop), 2008
Statistical Learning in Computer Vision (ECCV Workshop), 2004
American Association for Artificial Intelligence (Vision/Perception), 2004
Statistical Analysis in Computer Vision (CVPR Workshop), 2003

REVIEWER

NSF review panel (SBIR/STTR Phase I), 2018
NSF review panel (RI Small), 2013
NSF review panel (ITR Medium), 2003
NSF review panel (CAREER: RHA/CV), 2000, 2002, 2003
NSF review panel (RHA/CV), 2000
American Association for Artificial Intelligence (AAAI), Computer Analysis of Images and Patterns (CAIP), Computer Vision and Pattern, Recognition (CVPR), Electronics Letters, European Conference on Computer Vision (ECCV), IEEE Transactions on Image Processing, IEEE Transactions on Multimedia, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Signal Processing, IEEE Transactions on Information Security and Forensics, Information Hiding, International Conference on Computer Vision (ICCV), International Journal of Computer Vision, International Journal of Imaging Systems and Technology, Journal of Cognitive Neuroscience, Journal of the Optical Society of America, Journal of Visual Communication and Image Representation, Medical Physics, Perception, Proceedings of the Royal Society: Biological Sciences, SIGGRAPH, Vision and Applications, Vision Research

STUDENTS

Shruti Agarwal, Ph.D. adviser
Tiago Carvalho (2014), visiting Ph.D. student (UNICAMP, Brazil)
Emma Chiu '19, research adviser
Valentina Conotter (2011), Ph.D. co-adviser (University of Trento)
Julia Dressel '17, senior thesis adviser
Wei Fan, postdoctoral fellow
Olivia Holmes '15, senior thesis adviser
Daniel Hopkins '10, research adviser
Kimo Johnson (2007), Ph.D. adviser
Eric Kee (2013), Ph.D. adviser
Jethro Rothe-Kushel '03, research adviser
Benedikt Lorch (2018), visiting M.S. student (University of Erlangen)
Siwei Lyu (2005), Ph.D. adviser
Brandon Mader '16, research adviser
David Martin '00, senior thesis adviser
Kiley McEvoy '06, research adviser
Joseph Pechter '04, senior thesis adviser
William Pechter '04, senior thesis adviser
Senthil Periaswamy (2003), Ph.D. adviser
Coralie Phanord '16, research adviser
Andrew Pierce '02, research adviser
Alin Popescu (2005), Ph.D. adviser
Nelson Rosa '06, research adviser

Katherine Sherwin '01, research adviser
Priyanka Singh, postdoctoral fellow
Hai Sun (2004), Ph.D. co-adviser
Sydni Topper '18, research adviser
Joshua Wang '15, thesis adviser
Weihong Wang (2009), Ph.D. adviser
Angela Zhu '17, research adviser

TEACHING

Foundations of Applied Computer Science, Spring 2018
Data Structures and Analytics, Tuck School of Business, Spring 2017
Fundamentals of Web Programming, Tuck School of Business, Spring 2017
Introduction to Programming and Computation, CS 1, Fall 2016
Fundamentals of Web Programming, Tuck School of Business, Spring 2016
Numerical and Computational Tools for Applied Science, CS 70/170, Spring 2016
Introduction to Programming and Computation, CS 1, Fall 2015
Numerical and Computational Tools for Applied Science, CS 70/170, Spring 2015
Introduction to Programming and Computation, CS 1, Fall 2014
Introduction to Programming and Computation, CS 1, Spring 2014
Introduction to Programming and Computation, CS 1, Spring 2013
Digital Image Forensics, CS 89/189, Spring 2013
Digital Forensics, University of Trento, Italy, Spring 2011
Numerical and Computational Tools for Applied Science, CS 36/136, Summer 2008
Concepts in Computing, CS 4, Summer 2008
Numerical and Computational Tools for Applied Science, CS 36/136, Summer 2007
Concepts in Computing, CS 4, Summer 2007
Concepts in Computing, CS 4, Winter 2006
Numerical Methods in Computer Vision, CS 88/188, Fall 2004
Concepts in Computing, CS 4, Summer 2003
Concepts in Computing, CS 4, Summer 2002
Data Structures and Programming, CS 15, Winter 2002
Data Structures and Programming, CS 15, Fall 2001
Numerical Linear Algebra, CS106, Spring 2001
Data Structures and Programming, CS 15, Winter 2001
Data Structures and Programming, CS 15, Fall 2000
Fundamentals of Image Processing, CS 88/188, Spring 2000
Programming Languages, CS 68, Winter 2000
Data Structures and Programming, CS 15, Fall 1999

COLLEGE

COMMITTEES

Department Chair, 2015-2018
Committee Advisory to the President (tenure & promotions), 2016-2019
Department Associate Chair, 2004-2009
Ph.D. Advisor, 2004-2006
Steering Committee, Neuroscience Major, 2004-2008
Director Search, Neukom Institute for Computational Science, 2005
HHMI Undergraduate Biological Sciences Education Proposal, 2005
Green Grid Computing, 2004-2005
Computer Science Building Expansion, 2003-2005
Faculty Search, Thayer School of Engineering, 2004
Department Web Master, 1999-2004
Faculty Recruiting, 2003, 2010-2011
Ph.D. Admissions 2001-2003, 2010, 2012
Associate Director Search, ISTS, 2002
M.D./Ph.D. Admissions, 2001