

SHANNON VALLOR
Department of Philosophy
CURRICULUM VITAE

UNIVERSITY OF EDINBURGH
Dugald Stewart Building
3 Charles Street
Edinburgh, EH8 9LH
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AREAS OF SPECIALIZATION

AI and Emerging Technology Ethics, Philosophy of Technology, Applied Virtue Ethics

AREAS OF COMPETENCE

Philosophy of Science, Epistemology, Philosophy of Mind, Phenomenology

ACADEMIC APPOINTMENTS

Baillie Gifford Chair in the Ethics of Data and Artificial Intelligence

University of Edinburgh, Edinburgh Futures Institute 2020-present

Regis and Dianne McKenna Professor, Department of Philosophy, SCU 2018-2020

William J. Rewak, S.J. Professor, Department of Philosophy, Santa Clara University 2016-2018

Associate & Assistant Professor, Department of Philosophy, Santa Clara University 2006-2017

PROFESSIONAL/EXTERNAL APPOINTMENTS

Chair, Data Delivery Group of Scotland (2020-present)

Member, Humanising Machine Intelligence (HMI) Advisory Board, ANU (2020-present)

Member, AI and Data Ethics Advisory Board, University of Edinburgh (2019-present)

Member, Board of Trustees, Foundation for Responsible Robotics (UK)

Member, ORBIT-RRI Advisory Board, EPSRC, UK (2019-present)

AI Ethicist and Visiting Research Scientist, Google (2018-2020)

Steering Committee and 2019 Program Co-Chair, AI, Ethics and Society Conference of AAAI

Advisory Board Member, Capita Social

Associate Editor, Journal of Sociotechnical Critique

Executive Editorial Board Member, Philosophical Studies Book Series, Springer

Editorial Board Member, Philosophy, Technology & Society Book Series, Rowman & Littlefield

Past President, Society for Philosophy & Technology

Member, IEEE-SA Global Initiative for Ethical Considerations in AI & Autonomous Systems

Member, International Center for Information Ethics

EDUCATION

Ph.D., Philosophy, Boston College 2001

AWARDS /GRANTS

Summer Institute in Technology Ethics, Templeton World Charity Foundation 2019-2021

Responsible CS Challenge, Mozilla Foundation, SCU Project Team 2019-2020

Public Intellectual Award, College of Arts and Sciences, Santa Clara University 2017

President's Special Recognition Award, Santa Clara University	2017
World Technology Award in Ethics, World Technology Network	2015
Brutocao Award for Teaching Excellence, Santa Clara University	2015
National Science Foundation EESE Grant	2012-2014
Project: <i>Geospatial Privacy: Legal, Social and Ethical Implications for Users of Geocoded Data</i>	
Graves Award for Excellence in Teaching in the Humanities	2010

MONOGRAPHS AND EDITED VOLUMES

- ♦ *The AI Mirror: Rebuilding Human Wisdom in an Age of Automated Thinking* (forthcoming)
- ♦ *The Oxford Handbook of Philosophy of Technology*, editor (forthcoming from Oxford University Press, 2020)
- ♦ *Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting*. New York: Oxford University Press, 2016, 309 pp. hardcover, paperback, and e-book.

PEER-REVIEWED ARTICLES AND BOOK CHAPTERS

1. "Why Reliabilism is Not Enough: Epistemic and Moral Justification in Machine Learning." (co-authored with Andrew Smart, Larry James, Ben Hutchison, and Simone Wu), forthcoming in *Proceedings of AIES/AAAI 2020*
2. "Moral Machines: From Value Alignment to Embodied Virtue." (co-authored with Wendell Wallach) Forthcoming in *Ethics of Artificial Intelligence*, Matthew Liao, ed. (New York: Oxford University Press)
3. "AI and the Automation of Wisdom." In *Philosophy and Computing: Essays in Epistemology, Philosophy of Mind, Logic, and Ethics* (Cham: Springer, 2017), 161-178.
4. "AI and the Ethics of Self-Learning Robots." (co-authored with George Bekey) In *Robot Ethics 2.0: From Autonomous Cars to Artificial Intelligence*, Patrick Lin, Ryan Jenkins, and Keith Abney, eds. (New York: Oxford University Press, 2017), 338-353.
5. "Technology and the Virtues: A Response to My Critics." special author-meets-critics symposium of *Philosophy & Technology* 31(2) (2018): 305-316.
6. "Robots with Guns." In *Spaces for the Future: A Companion to the Philosophy of Technology*. Joseph C. Pitt and Ashley Shew, eds. (New York: Routledge, 2017), 73-81.
7. "Beyond Ordinary Givenness? Postphenomenology, Digital Imaging and Evidentiary Responsibility." In *Technoscience and Postphenomenology: The Manhattan Papers*. Jan Kyrre Berg Friis and Robert Crease, eds. (Lanham, MD: Lexington Press, 2015), 19-38.

8. "Moral Deskillling and Upskilling in a New Machine Age: Reflections on the Ambiguous Future of Character," *Philosophy and Technology* 28 (2015), 107-124.
9. "Social Media." In *Ethics, Science, Technology and Engineering: A Global Resource, 2nd Ed.*, J. Britt Holbrook, ed. (Farmington Hills, MI: Macmillan Reference, 2015), 203-206.
10. "Armed Robots and Military Virtue." In *The Ethics of Information Warfare*, Luciano Floridi and Mariarosaria Taddeo, eds. (Switzerland: Springer, 2014), 169-185.
11. "Experimental Virtues: Perceptual Responsiveness and the Praxis of Scientific Observation." In *Virtue Epistemology Naturalized: Bridges between Virtue Epistemology and Philosophy of Science*, Abrol Fairweather, ed. (Cham: Synthese Library Series, Springer, 2014), 269-290.
12. "Super Soldiers: The Ethical, Legal and Operational Implications (Part 2)." Co-authored with Patrick Lin, Max Mehlman, Keith Abney, Shannon French, Jai Galliot, Michael Burnam-Fink, Alexander R. LaCroix, and Seth Schuknecht. In *Global Issues and Ethical Considerations in Human Enhancement Technologies*, Steven John Thompson, ed. (Hershey, PA: IGI Global, 2014), 139-160.
13. "Hitting the Moving Target: The Challenges of Creating a Dynamic Curriculum to Address the Ethical Dimensions of Geospatial Data." (co-authored with John Newman Carr, Scott Freundsuh, William Gannon and Paul Zandbergen). *Journal of Geography in Higher Education* 38(4) (2014), 444-454.
14. "The Future of Military Virtue: Autonomous Systems and Moral Deskillling in the Military Profession." In *2013 5th International Conference on Cyber Conflict (CyCon 2013): Proceedings*, Karlis Podens, Jan Stinissen and Markus Maybaum, eds. (Tallinn, Estonia: NATO CCDCOE, 2013), 471-486.
15. "Flourishing on Facebook: Virtue Friendship and New Social Media." *Ethics and Information Technology*, 14(3) (2012), 185-199.
16. "Social Networking and Ethics." In *Stanford Encyclopedia of Philosophy*, E. Zalta, ed. Fall 2012 edition. <<http://plato.stanford.edu/archives/fall2012/entries/ethics-social-networking/>>
17. "New Social Media and the Virtues." In *The Good Life in a Technological Age*, Philip Brey, Adam Briggles and Edward Spence, eds. (London: Routledge, 2012), 193-202.

18. "Carebots and Caregivers: Sustaining the Ethical Ideal of Care in the 21st Century." *Philosophy & Technology* 24:3 (2011), 251-268. Reprinted in *Machine Ethics and Robot Ethics*, Wendell Wallach and Peter Asaro, eds. (New York: Ashgate, 2016)
19. "Knowing What to Wish For: Human Enhancement Technology, Dignity and Virtue." *Techné: Research in Philosophy and Technology* 15:2 (2011), 82-100.
20. "Social Networking Technology and the Virtues." *Ethics and Information Technology*, 12:2 (2010), 157-70. Reprinted in *The Ethics of Information Technologies*, Mariarosaria Taddeo and Keith Miller, eds. (New York: Ashgate, 2016)
21. "The Pregnancy of the Real: A Phenomenological Defense of Experimental Realism." *Inquiry*, 52:1 (2009), 1-25.
22. "The Fantasy of Third-Person Science: Phenomenology, Ontology and Evidence." *Phenomenology and the Cognitive Sciences*, 8:1 (2009), 1-15.
23. "An Enactive-Phenomenological Approach to Veridical Perception." *Journal of Consciousness Studies*, 13:4 (2006), 39-60.
24. "The Intentionality of Reference in Husserl and the Analytic Tradition." In *Intentionality: Past and Future*, eds. G. Forrai and G. Kampis. (Amsterdam: Rodopi, 2005), 111-125.
25. "Frege's Puzzle: A Phenomenological Solution?" *Philosophy Today* (SPEP Supplement 2002), 178-185.
26. "How We Think About Things: Husserl, Putnam and the Metaphysics of Reference." *Discourse*, vol. 5 (Spring 1999), 1-11.

EDITORIALS/ ESSAYS/EDUCATIONAL AND TRAINING MATERIALS

1. *Ethics in Tech Practice* (with Brian Green and Irina Raicu), Markkula Center for Applied Ethics, <https://www.scu.edu/ethics-in-technology-practice/> July 2018. Funded by Omidyar Network Tech Society and Solutions Lab. Adapted for in-house use at Google, Google X, and other leading technology companies.
2. *An Introduction to Cybersecurity Ethics*, Markkula Center for Applied Ethics, <https://www.scu.edu/ethics/focus-areas/technology-ethics/resources/an-introduction-to-cybersecurity-ethics/> February 2018. Funded by Accenture.

3. *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, <https://www.scu.edu/ethics/focus-areas/technology-ethics/resources/an-introduction-to-data-ethics/> October 2017. Funded by Accenture.
4. "Lessons from Isaac Asimov's Multivac." *The Atlantic* (May 2, 2017) <https://www.theatlantic.com/technology/archive/2017/05/lessons-from-the-multivac/523773/>
5. "On Artificial Intelligence and the Public Good." Markkula Center for Applied Ethics blog, *Internet Ethics: Views from Silicon Valley*. July 19, 2016. <https://www.scu.edu/ethics/internet-ethics-blog/on-artificial-intelligence-and-the-public-good/> Also published by the White House Office of Science and Technology Policy, September 1, 2016 (Respondent 50, p. 47) direct link <https://www.whitehouse.gov/sites/default/files/microsites/ostp/OSTP-AI-RFI-Responses.pdf>
6. "Technoscience and the Resilience of Phenomenology: A Review of Don Ihde's *Husserl's Missing Technologies*." *Techné: Research in Philosophy and Technology* 20:2 (2016), pp. 90-94.
7. *An Introduction to Software Engineering Ethics* (with Arvind Narayanan), Markkula Center for Applied Ethics, <https://www.scu.edu/ethics/focus-areas/more/engineering-ethics/an-introduction-to-software-engineering-ethics/> 2013, updated October 2015.
8. "A Fragile Pedestal – How Strong is Our Commitment to Democracy? A Response to Martha Nussbaum." *Explore* (Spring 2015), 72-75.
9. "Big Data, Democracy and The Path Not Taken." *Huffington Post*, June 20, 2014. http://www.huffingtonpost.com/shannon-vallor/big-data-democracy-and-th_b_5516259.html
10. "Why Software Engineering Courses Should Include Ethics Coverage," (co-authored with Arvind Narayanan), *Communications of the ACM*, 53:4 (2014), 23-25.
11. "Examined Lives." (Formerly "Self-Surveillance Technologies vs. Reflective Practice.") *The Philosophers' Magazine*, 63:4, (2013), 91-98.

SELECTED KEYNOTES AND INVITED ADDRESSES (ACADEMIC)

1. "Should the Future of Intelligent Machines be Humane or Humanizing?" Australian National University, Humanising Machine Intelligence Grand Challenge Launch, August 9, 2019

2. "The New Cyberweapons: How Trolls, Bots, and Sockpuppets Compromise Security by Undermining Civic Integrity." University of Zurich, May 3, 2019
3. "Thinking Outside the Box: AI & the Shrinking Space of Moral Reasons," MIT CSAIL (Computer Science and Artificial Intelligence Laboratory), April 8, 2019
4. "AI and Moral Intelligence: Preserving Humane Thinking in a Machine Age," Peter Wall Institute for Advanced Studies, University of British Columbia, February 25, 2019
5. "Humanizing Machines: AI and the Mediation of Human Self-Cultivation." Human-Technology Relations Conference, University of Twente, NL, July 11, 2018.
6. "Ethics and the Value Alignment Problem," Expert Workshop III: Control and Responsible Innovation in the Development of Autonomous Machines, The Hastings Center, Garrison, NY. March 28, 2018.
7. "Rebuilding Civic Virtue in the Digital Age," Sacred Heart University, Fairfield, CT. March 26, 2018.
8. "Thinking Outside the Black Box: AI and the Shrinking Space of Moral Reasons," The Albert J. Fitzgibbons Lectures, Boston College, Chestnut Hill, MA, March 22, 2018.
9. "Thinking Outside the Black Box: AI and the Shrinking Space of Moral Reasons," Yale University Center for Bioethics, March 28, 2018.
10. 'The AI Mirror/How to Cultivate Humane Machines (and People).' The Harold Stoner Clark Lectures, California Lutheran University, Thousand Oaks, CA, February 20, 2018.
11. "AI, Algorithmic Opacity, and the Shrinking Space of Moral Reasons," Computing, Artificial Intelligence, and Ethics, Dartmouth College, November 15, 2017.
12. "The Troubles We Do Not Avoid: Human Character and the Emerging Technologies of War," Technology-Enhanced Warfare: Perspectives from Ethics and Social Science, Rome Global Gateway, October 17, 2017.
13. "AI and a Future Worth Wanting: How to Harmonize Machine and Human Values," Harold K. Schilling Memorial Lecture, The Rock Ethics Institute, Penn State University, September 15, 2017.
14. "Towards a Moral Framework for Human-AI Relations," SRI International Interdisciplinary Workshops on Machine Consciousness, Menlo Park, CA, July 19, 2017.

15. "Overcoming Barriers to Cross-Disciplinary Consciousness Research," SRI International Interdisciplinary Workshops on Machine Consciousness, Menlo Park, CA, August 11, 2017.
16. "Algorithmic Opacity and the Shrinking Space of Moral Reasons in Computing Practices," Annual Meeting of the International Association for Computing and Philosophy, Stanford University, June 28, 2017.
17. "Technomoral Virtues and the Future of Human Flourishing," ADAPT Centre, Trinity College, Dublin, Ireland, June 19, 2017.
18. SPT Presidential Address, 20th International Conference of the Society for Philosophy and Technology, Technical University of Darmstadt, Germany, June 17, 2017.
19. "Artificial Intelligence and Public Trust," Ethics of Technology: The Future Agenda (4TU Ethics), University of Twente, Netherlands. June 12, 2017.
20. "AI's Ethical Imperative: How to Humanize Machine Values," Stanford Computer/AI Forum, Stanford University, April 11, 2017.
21. "*Technology and the Virtues: A Response to My Critics*," Author-meets-critics symposium at APA Central Division Meeting, Kansas City, March 2, 2017.
22. "Ethics, Innovation and the Good Life," Faith and Innovation Conference, St. Andrews Episcopal Church, Saratoga, CA. February 25, 2017.
23. "The Robotic Mirror: Finding Humanity in Machine Values," Sonoma State University. February 14, 2017.
24. "Moral Dialectic in Human-Machine Ethics," Expert Workshop II: Control and Responsible Innovation in the Development of Autonomous Machines. Hastings Center, Garrison, NY. October 31, 2016.
25. "Responsible Robotics and Moral Philosophy," Robo-Philosophy 2016, University of Aarhus, Denmark. October 21, 2016.
26. "Artificial *Phronesis*: A Critical Inquiry," Robo-Philosophy 2016, University of Aarhus, Denmark. October 20, 2016.
27. "The Case for the Technomoral Virtues: Technology and Human Flourishing," University of Oregon, Eugene, OR, January 20, 2016.

28. "Cultivating the Technomoral Self: Challenges and Opportunities for 21st Century Virtue." 19th International Conference of the Society for Philosophy and Technology, Shenyang, China, July 2015.
29. "A.I. and the Automation of Moral Wisdom." Joint conference of the International Association of Computing and Philosophy and Computer Ethics: Philosophical Enquiry/International Society for Ethics and Information Technology, University of Delaware, June 2015.
30. "The Ethics of App Development." MAGIC Digital Media Research Center, Rochester Institute of Technology, Rochester, NY, March 18, 2015.
31. "Ethics for Software/App Design." College of Engineering, Cal Poly at San Luis Obispo, CA, March 5, 2015.
32. "The Automation of Scientific Inquiry: AI, Scientific Virtue and The Value Problem." 24th Biennial Meeting of the Philosophy of Science Association, Chicago IL, November 9, 2014.
33. "Commentary on Don Ihde's 'Husserl's Missing Technologies.'" 45th Annual Husserl Circle Meeting, Dartmouth College, May 29, 2014.
34. "The Institution of Practical Wisdom: Cultivating Organizational ELSI Expertise." Plenary Address, *Ahead Of The Curve: Anticipating Ethical, Legal, and Societal Issues Posed by Emerging Weapons Technologies*, April 23 2014, University of Notre Dame.
35. "Perceptual Responsiveness as a Virtue: Notes for a Phenomenological Ethic." American Philosophical Association, Pacific Division, April 16, 2014, San Diego CA.
36. "Paying Moral Attention: Ethics in an Age of Techno-Distracted." University Honors Program Presents, SCU, April 2, 2014.
37. "The Virtue of Moral Attention: Ethical and Cognitive Implications of Media Multitasking." University of California at Merced, December 2013.
38. "Digital Imaging and New Evidential Practices In The Age Of Information: A (Post)-Phenomenological Analysis." International Conference of the Society for Philosophy and Technology, Lisbon, July 2013.
39. "Moral Deskillling and Upskilling in a New Machine Age: Reflections on The Ambiguous Future of Character." CEPE 2013, Universidade Autónoma de Lisboa, Lisbon, July 2013.
40. "Drones, Robots and the Moral Deskillling of War: Is 'Military Virtue' Obsolete?" Macalester College, St. Paul, MN, December 2012.

41. "Information Technologies, Digital Imaging, and the Ethics of Evidence" AISB/IACAP 2012 World Congress Symposium on Information Ethics, University of Birmingham, UK, July 2012.
42. "The Hermeneutic Task of Conceptualizing Techno-Moral Change" EPET Conference, Maastricht University, Netherlands, July 2012.
43. "New Technologies as Pedagogical Bridges: Teaching Classic Texts in the Humanities." SUNY Stony Brook, April 2012.
44. "Beyond Ordinary Givenness? Post-Phenomenology and the Future of Evidence." *Postphenomenology and the Future of the Philosophy of Technology: A Conference in Honor of Don Ihde*, SUNY Stony Brook, March 2012.
45. "How to Bring Battlefield Ethics into the Lab (and Back)." Workshop on *The Ethics of Informational Warfare*, organized by the UNESCO Chair in Information and Computer Ethics in collaboration with the Marie Curie Intra European Fellowship Program, University of Hertfordshire, UK, July 2011.
46. "Carebots and Caregivers: Robotics and the Ethical Ideal of Care." Conference of the International Association for Computing & Philosophy, Aarhus University, DK, July 2011.
47. "New Digital Media and the Cultivation of Character." City University of Hong Kong, November 2010.
48. "Enhancement Technologies and Human Dignity: On the Virtues of Transformation." International Conference of the Society for Philosophy and Technology: *Converging Technologies, Changing Societies*, University of Twente, Netherlands, July 2009.
49. "Social Networking and the Virtues." American Philosophical Association, Pacific Division Group Meeting of *Society for Philosophy and Technology*, Vancouver, B.C., April 2009.
50. "Technology, Communication and the Virtues." GLITA workshop on *The Good Life in a Technological Age*, University of Twente, Netherlands, June 2008.
51. "Social Networking and the Virtues." Panel event *The Ethics of Social Networking*, Stanford University (Stanford Center for Internet and Society), February 2008.
52. "The Pregnancy of the Real: A Phenomenological Analysis of Experimental Realism." 46th Annual Meeting of the Society for Phenomenology and Existential Philosophy, DePaul University, Chicago, November 2007.

SELECTED PRESENTATIONS AND PANELS (INDUSTRY/POLICY/PUBLIC)

53. "Looking in the AI Mirror" BCI Data Day, August 14, 2019, Santiago, Chile
54. "AI Ethics: Building a Humane Future with Machines" Board Dinner, Computer History Museum, Mountain View CA, July 24, 2019
55. "Making Room for Machines"/"Outsourcing Humanity: Do Algorithms Make Better Decisions than People?" World Science Festival, NYC, May 31-Jun 1, 2019
56. "How AI Can Be a Net Positive for Human Dignity," Aspen Institute Germany, AspenAI 2019, March 29, 2019
57. "Bridging the Gap: Cybersecurity + Public Interest Technology," Panel Presentation at RSA Security Conference, San Francisco Moscone Center, March 7, 2019
58. "Silicon Valley and the Fourth Industrial Revolution," Presentation and Panel at 2019 State of the Valley Conference, San Jose Convention Center, February 15, 2019
59. "Humanity and Tech: The Future of Human Character in a New Machine Age," The Federation Presents, Manchester UK, August 23, 2018
60. "Thinking Outside the Black Box: AI and the Shrinking Space of Moral Reasons," Ethical Culture Society of Silicon Valley, Los Altos CA, May 20, 2018
61. 'AI Bias and Algorithmic Justice,' PayPal Fireside Chat, PayPal HQ, San Jose, CA, March 7, 2018
62. "The Real Risks of Artificial Intelligence," 13th CRO Assembly, SwissRe Centre for Global Dialogue, Zurich, November 28, 2017
63. "Artificial Intelligence and a Future Worth Wanting: Harmonizing Machine and Human Values," Investment Innovation Conference, Fairmont Southhampton, Bermuda, October 25, 2017
64. "AI and a Future Worth Wanting," Distinguished Researcher Speaker Series, Accenture, San Jose, CA, September 27, 2017
65. "AI and the Future of Human Flourishing," IBM World of Watson, Mandalay Bay Hotel, Las Vegas. October 26, 2016.
66. "Our Autonomous Future," The Seminar, Scottsdale AZ, June 8, 2016.

67. "The Ethical Challenges of Invisible Software," IEEE Ethics 2016, Vancouver B.C., May 14, 2016.
68. "Technomorality and the Future: A Survival Guide for Advanced Species." Linus Pauling Memorial Lecture, Institute for Science, Engineering and Public Policy, Portland, OR, January 14, 2016.
69. "21st Century Virtue: Ethics, Technology and the Future," World Technology Summit, New York, NY, November 19, 2015.
70. "Artificial Intelligence Ethics." Panelist at Silicon Valley Reinvents the Wheel, The Computer History Museum, Mountain View, CA, October 5, 2015.
71. "What is a Good App?" Silicon Valley iOS Developers Meetup, Skype HQ, Palo Alto, CA, July 21, 2014.
72. "Ethics for App Developers." Renaissance iOS App Developers Conference, January 2014, San Francisco CA.
73. "Ethics and [Micro]Locational Privacy in Mobile App Development." iBeacon Makers' Workshop, Andreessen Horowitz, Menlo Park, April 29, 2014.
74. "The Future of Military Virtue: Autonomous Systems and Moral Deskillling in the Military Profession." 5th International Conference on Cyber Conflict (CyCon 2013), NATO Cooperative Cyber Defence Centre of Excellence, Tallinn, Estonia, June 2013.

UNIVERSITY ADMINISTRATION AND SERVICE

- ♦ Senior Fellow, SCU Center for Arts and Humanities, 2018-present
- ♦ SCU College of Arts and Sciences Senior Lecturer Promotion Committee, 2018-present
- ♦ Faculty Director, CyPhi Residential Learning Community, 2018-present
- ♦ Department Chair, SCU Department of Philosophy, 2014-2017
- ♦ SCU College of Arts and Sciences Rank and Tenure Committee, 2015-2016
- ♦ Steering Committee, Markkula Center for Applied Ethics, 2015-present
- ♦ Steering Committee, Center for Science, Technology and Society/Miller Center for Social Entrepreneurship, 2009-2015
- ♦ Member, Internet Ethics Advisory Board, Markkula Center for Applied Ethics 2013-present