

TIM_BM_018: Theories, Methods, and Experiments in Art & AI

Masaryk University, Faculty of Arts, Brno, Czech Republic

Visiting Assistant Professor: Emily L. Spratt

Spring 2022



Prerequisites:

There are no official prerequisites except that students are conversant/fluent in English as the course will be taught in English. It is recommended that students will have completed some coursework in the arts, are able to fully commit their time to the intensive and condensed structure of the class, and recognize that the course is reading intensive relative to its timeframe. Overall, the course welcomes all students that have a passion for art and technology, and have interest in the history of ideas. Please note that currently the course size is limited to a maximum of 50 students in accordance with the latest Covid regulations.

Course Description:

The use of artificial intelligence—propelled by deep learning techniques—to analyze, curate, and even generate digital images is having a profound influence on visual culture, one that well exceeds Jacques Derrida’s anticipations of the effects of technology on society as he described them in *Archive Fever*. While regulation around emerging technologies such as AI is being formulated across the globe and with much urgency, a concept of “tech ethics” is being espoused by the leading technology companies that is imposing a simplistic moralistic framework onto corporate policies—often under the blindingly naïve rubric of “AI for Good”

programs. By contrast, the aim of this intensive seminar is to foster a nuanced and critical discourse—focused on AI applications in the visual arts—that takes consideration of the points of convergence around the current emerging technology debates in media studies, art history, experimental artistic practice, data science ethics, hermeneutics, and philosophy. Recognizing that the influence that AI has on all images is radically shaping our contemporary visual culture, this course asks students to consider what is at stake for its future, as laws governing the use of AI on images are still in a formative stage. Although consensus on the relationship of art and AI remain nebulous, AI art—in all of its radical manifestations—may well serve as a paradigm for policy makers.

Beginning with reflection on Adorno’s prescient statement that technical rationality is the rationality of domination, the course will challenge both the cynicism and optimism around emerging technologies and their effect on visual culture. We will therefore question the accountability that media studies and art history have, if any, to steer the ethics debates spurred by today’s “culture industry” of digital images, and ask what the custodianship of this space entails by examining its structures of power, conveyed visually or through automated processes enabled by computer vision science. By interrogating the socio-cultural effects of the use of machine learning on images, such as algorithmic biases that lend to discrimination, or surveillance and privacy concerns in regard to facial recognition technologies, new and diverse perspectives on visual culture are investigated and actively encouraged. Although the mechanisms that enable technology to develop may be leading to the commodification and homogenization of visual culture, the seemingly democratic promises of open access, inclusivity, and diversity that big tech touts keep us captivated yet surprisingly uncritical. If the transformative role of AI on our visual culture is constituting a new type of archaeology of knowledge, how do we critically lend to its discourse through the theories, methods and experiments surrounding art and AI?

Course Objectives and Learning Outcomes:

The intended outcome of the course is to provide students with a background on the theory and methods utilized to study our visual culture while also introducing the most influential contemporary perspectives on the ethics of AI-based technologies as they apply to art and images at large. With focus placed on the way in which AI is shaping art and visual culture today, the overall objective of the seminar is to cultivate critical thinking skills, a nuanced understanding of the relationship of art and technology, and a foundational background in academic approaches to visual culture, media studies, art history, and the ethics of emerging technologies.

The course is also designed to develop both students’ creative and analytical skills through informed historical, theoretical, and ethical considerations of the subject while actively encouraging diverse perspectives and voices on the examined topics. The discussion section of the course is intended to help students gain confidence and experience in bringing their

perspectives to the table and to partake in group debates and conversations in an environment that is respectful and encouraging, yet also rigorous. The course is structured to foster students' discussion skills in a constructive learning environment. After completing the course, students will be well-equipped to critically lend to the emerging art and AI discourse and, by extension, be able to partake in the ethical debates surrounding AI applications at large in our society. In this regard, for students, this course lends to professional theoretical and declarative knowledge of the subject(s), skills to apply their knowledge to the field(s), and general competencies related to analytical and creative thinking.

Again, please note that this course is taught in English and the required reading materials are in English.

Course Content:

Theory and methods in art history, visual culture, media studies, applied computer vision science, art and AI, ethics of data science, philosophy, experimental art practice.

Course Schedule and Readings:

N. B. Please note that given the short time frame in which this course takes place that there is a heavy reading load. If possible, read the materials in advance of the course's start date and then refresh your reading of the articles in advance of each class. On account of the ongoing pandemic, the professor has favored course readings that are available online to facilitate their accessibility to everyone, especially given the potentially limited access to libraries during this period. The public hyperlinks listed were assembled by the Professor and provided here only for educational use within this course. If possible, utilize the original source of any course-related publication. Please refer to the extended bibliography for a more complete overview of readings that are directly relevant, yet are not required readings for the course. It is recommended to do the required readings in the order in which they are presented in the course schedule.

Tuesday, May 24

4pm: Professor Spratt Keynote Lecture and Reception at Brno House of the Arts, “Art and Technology Beyond Disruptive Innovation: The Catechistic Demands of Creative AI and Digital Ledger Technologies in the New Tech Economy.”

Assignments/Readings to complete for class on Wednesday:

Theodor W. Adorno and Max Horkheimer, “[The Culture Industry: Enlightenment as Mass Deception](#),” in *Dialectic of Enlightenment*, trans. Edmund Jephcott, Stanford University Press, 2002, pp. 94–136. (Consider the implications of this theory in relation to culture as expressed in the digital medium.)

Stuart Russel, “[Questions and Answers, The Future of Artificial Intelligence](#),” Berkeley Research Website Article. (This is a brief overview of the key terms and concepts that will be discussed in the course. Familiarize yourself with all the terms. Cross reference if they are not clear.)

Emily L. Spratt, Ahmed Elgammal, “[Computational Beauty: Aesthetic Judgment at the Intersection of Art and Science](#),” in *Computer Vision: ECCV Conference Proceedings 2014*, Springer Verlag, Fall 2014. (Note the early date of publication in regard to computer vision and AI advances, focus on the philosophical part of the article.)

Lev Manovich, Chapter Two, [Artificial Aesthetics, A Critical Guide to AI, Media, and Design](#), Author Publication with Emanuele Arielli, 2021. (If you have access to Lev Manovich’s book *Cultural Analytics* (MIT Press, 2020), read Chapter One.)

Digital Exploration: Refik Anadol, *Archive Dreaming*, <https://refikanadol.com/works/archive-dreaming/> (Explore this artwork by watching the five-minute video of it.)

Wednesday, May 25

10 am—11:30 am: Introductions, Course Overview and Goals, Introductory Remarks

11:30 am—12:15 pm: Foundations Lecture

12:15 pm—12:30 pm: Writing Session

12:30 pm—12:40 pm: Small Group Formations

12:40 pm—1:30 pm: Lunch (and individual meetings with the Professor)

1:30 pm—2:10 pm: Applications Lecture

2:10 pm—2:40 pm: Foundations/Applications Q&A

2:40 pm—3 pm: Small Group Discussion

Assignments/Readings to complete for class on Thursday:

Frank Pasquale, [*The Black Box Society: The Secret Algorithms that Control Money and Information*](#), Harvard University Press, 2015, (Read Chapter One and Scan Chapter Two).

Anupam Chander, "[*The Racist Algorithm?*](#)" *Michigan Law Review* 115, no. 6, 2017, pp. 1023–1045. (This is a response to Pasquale's book.)

Michael Kearns and Aaron Roth, "[*Ethical Algorithm Design*](#)," *ACM SIGecom Exchanges*, Vol 18, No. 1, July 2022, 31-36. (This short article is a summary of the authors' recent and important book *The Ethical Algorithm*.)

Nick Bostrom, "[*The Vulnerable World Hypothesis*](#)," *Global Policy* Volume 10, Issue 4, November 2019, 455-476.

Emily L. Spratt, "[*Gastronomic Algorithms: Artistic and Sensory Exploration of Alain Passard's Michelin Plates in the Manner of Giuseppe Arcimboldo with GANs*](#)," *Leonardo*, MIT Press, 54 (6), December 22, 2021.

Digital Exploration: Kate Crawford and Trevor Paglen, *Training Humans*, Fondazione Prada, 2020, <http://www.fondazioneprada.org/project/training-humans/?lang=en>. (Watch five-minute video at the end of the page, too.)

Thursday, May 26

10 am—10:50 am: Theory and Methods Lecture: Toward an Ethics of Art and Technology

10:50 am—11:15 am: Questions and Discussion

11:15 am—11:45 am: Writing Session

11:45 am—12:40 am: Small Group Discussions and Presentation Preparations

12:40 pm—1:30 pm: Lunch (and individual meetings with the Professor)

1:30 pm—2 pm: Technology Ethics Lecture

2 pm—2:10 pm: Discussion

2:10 pm—3 pm: Small Group Presentations

Assignments/Readings to complete for class on Friday:

Marshall McLuhan and Quentin Fiore, [*The Medium is the Massage: An Inventory of Effects*](#), Random House, 1967. (Read in detail the beginning of the book and scan through the rest. Ask yourself what role the medium of the digital is playing in society today. Consider the role of AI as a medium and question its influence on the message it conveys. Question the role of the medium in your final group and individual project).

Emily L. Spratt, "[Creation, Curation, and Classification: Mario Klingemann and Emily L. Spratt in Conversation](#)," XRDS Magazine, ACM, vol. 24, no.2, 2018.

Digital Exploration: Mario Klingemann on Artificial Intelligence, Technology and our Future, <https://www.sothebys.com/en/articles/artist-mario-klingemann-on-artificial-intelligence-art-tech-and-our-future>. (Watch embedded link to interview with the artist, which is five-minutes long.)

Digital Exploration: Joy Buolamwini, *Gender Shades*, MIT Media Lab, <http://gendershades.org> ([Watch five-minute researcher/artist/technologist video](#))

Digital Exploration: Lev Manovich, *Selfiecity Project*, <http://selfiecity.net>. (Explore website)

Prepare individual project to present on Friday along with write-up

Friday, May 27

10 am—10:40 am: Future Considerations on Art and AI, Approaches to the New Tech Economy and Technocracy

10:40 am—11 am: Questions and Discussion

11am—11:30 am: Writing Session

11:30 am—12:20 am: Small Group Discussions and Presentation Preparations

12:20 pm—1:10 pm: Lunch (and individual meetings with the Professor)

1:10 pm—2:00 pm: Small Group Presentations

2:00 pm—2:10 pm: Break and Set Up for Individual Presentations

2:10 pm—4 pm: Individual Project Presentations

RECOMMENDED MOVIES FOR AFTER THE COURSE

Videodrome (1983 film), David Cronenberg.

Her (2013 film), Spike Jonze.

Ex Machina (2014 film), Alex Garland.

Fellini Forward (2021 film), Zackary Canepari, Drea Cooper, Max Niemann.

Extended Bibliography (Required and Recommended Readings) and Other Course Materials:

Theodor W. Adorno and Max Horkheimer, "The Culture Industry," in *Dialectic of Enlightenment*, trans. Edmund Jephcott, Stanford University Press, 2002, pp. 94–136.

Marshall McLuhan and Quentin Fiore, *The Medium is the Massage: An Inventory of Effects*, Random House, 1967, (selections).

Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, ed. Hannah Arendt, Jonathan Cape, 1970, pp. 219–253.

Nick Bostrom, "Past Developments and Present Capabilities," in *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press, 2014, pp. 1–25.

Rosalind Krauss, "The Impulse to See," in *Vision and Visuality*, ed. Hal Foster, Bay Press, 1988, pp. 51–75.

Susan Sontag, "One Culture and the New Sensibility," in *Against Interpretation*, Farrar, Straus and Giroux, 1966, pp. 293–304.

Emily L. Spratt, Ahmed Elgammal, "Computational Beauty: Aesthetic Judgment at the Intersection of Art and Science," in *Computer Vision: ECCV Conference Proceedings 2014*, Springer Verlag, Fall 2014.

Stuart Russell, "How Might AI Progress in the Future," in *Human Compatible: Artificial Intelligence and the Problem of Control*, Penguin, 2019, pp. 62–102.

Hito Steyerl, "In Defense of the Poor Image," in *The Wretched of the Screen*, Sternberg Press, 2012, pp. 31–45.

Jacques Derrida, *Archive Fever*, University of Chicago Press, 1996, (Selections).

André Malraux, *Museum Without Walls (Le Musée Imaginaire)*, Secker & Warburg, 1967, (Selections).

Martin Heidegger, "The Question Concerning Technology," in *The Question Concerning Technology, and Other Essays*, Harper & Row, 1977, pp. 3–35.

Will Slauter, *Who Own the News?: A History of Copyright*, Stanford University Press, 2019, pp. 1–27 and 271–286.

Edward Herman and Noam Chomsky, *Manufacturing Consent: The Political Economy of Mass Media*, Pantheon Books, 1988, (Selections).

Clement Greenberg, "Avant-Garde and Kitsch," *The Partisan Review*, 1939, pp. 34–49.

Lev Manovich, *Cultural Analytics*, MIT Press, 2020, (Chapter one).

Lev Manovich and Emanuele Arielli, *Artificial Aesthetics: A Critical Guide to AI, Media and Design*, Self-Publication, 2021.

Kate Crawford, "Halt the use of facial-recognition technology until it is regulated," *Nature* 572, August 27, 2019, p. 565.

Legacy Russell, *Glitch Feminism, A Manifesto*, Verso, 2020, (Selections).

Griselda Pollock, "Is Feminism a trauma, a bad memory, or a virtual future?" *Differences, A Journal of Feminist Cultural Studies*, Duke University Press, 2016, pp. 27-61.

Frank Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information*, Harvard University Press, 2015, (Chapters one and two).

Anupam Chander, "The Racist Algorithm?" *Michigan Law Review* 115, no. 6, 2017, pp. 1023–1045.

Emily L. Spratt, "Creation, Curation, and Classification: Mario Klingemann and Emily L. Spratt in Conversation," *XRDS Magazine*, ACM, vol. 24, no.2, 2018.

Michael Kearns and Aaron Roth, *The Ethical Algorithm: The Science of Socially Aware Algorithm Design*, Oxford University Press, 2019, pp. 1–93. (Note that this book reads quickly.)

Michel Foucault, "Panopticism," in *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, Vintage Books, 1995, pp. 195–228.

Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, PublicAffairs, 2019, (Selections).

Guy Debord, *The Society of the Spectacle*, Black & Red, 1970, (Selections).

Nick Bostrom, "The Vulnerable World Hypothesis," *Global Policy* Volume 10, Issue 4, November 2019, 455-476.

Stuart Russel, "Questions and Answers," Berkeley Research Website Article.

Anna Wiener, *Uncanny Valley, A Memoir*, New York, 2020.

Digital Exploration: Mario Klingemann on Artificial Intelligence, Technology and our Future, <https://www.sothebys.com/en/articles/artist-mario-klingemann-on-artificial-intelligence-art-tech-and-our-future>. (Watch embedded link to interview with the artist.)

Digital Exploration: Refik Anadol, *Archive Dreaming*, <https://refikanadol.com/works/archive-dreaming/>

Digital Exploration: Kate Crawford and Trevor Paglen, *Training Humans*, Fondazione Prada, 2020, <http://www.fondazioneprada.org/project/training-humans/?lang=en>.

Digital Exploration: Benjamin Anderson et al., *Mnemosyne: Meanderings Through Aby Warburg's Atlas*, 2013, warburg.library.cornell.edu.

Digital Exploration: Briefly Examine the Public Domain Visualization Project, New York Public Library, <http://publicdomain.nypl.org/pd-visualization>.

Digital Exploration: Lev Manovich, *Selfiecity Project*, <http://selfiecity.net>.

Digital Exploration: Mario Klingemann, *Appropriate Response*, <http://quasimondo.com>.

Digital Exploration: Joy Buolamwini, *Gender Shades*, MIT Media Lab, <http://gendershades.org>

Digital Exploration: Cathy O’Neil, “The Era of Blind Faith in Big Data Must End,” *Ted Talk*, April 2017, https://www.ted.com/talks/cathy_o_neil_the_era_of_blind_faith_in_big_data_must_end?language=en (this is only ten-minutes long).

Digital Exploration: Microsoft Research, *FATE: Fairness, Accountability, Transparency, and Ethics in AI*, <https://www.microsoft.com/en-us/research/theme/fate/>.

Digital Exploration: Google Code of Conduct, <https://abc.xyz/investor/other/google-code-of-conduct/>.

Watch: *Fellini Forward* (2021 film), Zackary Canepari, Drea Cooper, Max Niemann, <https://www.imdb.com/title/tt15354380/>.

Watch: *Ex Machina* (2014 film), Alex Garland.

Watch: *Videodrome* (1983 film), David Cronenberg and *Her* (2013 film), Spike Jonze.

Planned Learning Activities and Teaching Methods:

Each class begins with a lecture by the professor and then follows with a writing and discussion session. In addition, the course will feature the use of break-out groups in the discussion period. Students will be required to actively participate in the course and to make presentations within the class. Students are expected to do homework for the course which consists mainly of reading assignments and examining digital course materials, artworks, and collections online. As a final product of the course, students will create a theoretical design for an imaginary (*or not imaginary!*) art and AI project that they will critically discuss in a final essay and present to the class.

Evaluation Methods and Criteria:

Given the short and intensive seminar format of this course, full attendance and active and engaged participation that demonstrates that students have done the readings are the most significant components of the evaluation. In addition, there will be one written essay required as a final evaluation marker of the course that encourages the use of both creative and critical-thinking approaches to the subject matter.

Grading Distribution:

The course only has a pass/fail grading option.

Attendance is 40%, participation that demonstrates that the student has done the required reading is 40%, presentation of individual and group work in a professional communication style is 10%, and required final essay, which also demonstrates that the student has done the required readings is 10%. In order to pass the course, students must get a minimum evaluation of 65%.

Thank you for your interest in art and AI!!!

Professor Emily L. Spratt

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