

IDS 2935: AI + Art/Science/Fiction

Quest 1: The Examined Life

I. General Information

Class Meetings

- Spring 2023
- Tuesdays Period 7 (1:55PM – 2:45pm), Thursday Period 7-8 (1:55pm -3:50 PM)
- NRG 205 (PICT) at Digital Worlds Institute

Instructor

- Amelia Winger-Bearskin
- Lecture NRG 111-UF Main Campus, Digital Worlds Institute Tuesdays 11:45 AM - 1:40 PM
- Fridays in person group discussion session TUR 2354 [Turlington Hall] 9:35 AM - 10:25 AM
- Amelia@digitalworlds.ufl.edu

Course Description

Artificial Intelligence: What is it? What is it used for? What is at stake?

How can investigating AI from the perspectives of Art, Science, and Fiction help to uncover the history, present, future, and implications of AI? Each week we will explore AI core concepts from three perspectives: Art, Science, and Fiction. By the end of this course, you will be able to separate the facts from the hype and learn how to leverage fiction to prototype the future. This class is open to any student regardless of technical or creative background. It has an interdisciplinary approach to the history and practice of AI, through an integrated humanities perspective. We look at prose, poetry, fine art, film, music, society, law, policy, and creative coding arts to understand the impact and innovation in the diverse fields of Artificial Intelligence. We will go over key concepts in AI and creative applications of Machine Learning Technologies.

Quest and General Education Credit

- Quest 1
- Humanities
- Writing Requirement (WR) 2000 words and the instructor will evaluate and provide feedback, on all of the student's written assignments with respect to grammar, punctuation, clarity, coherence, and organization;

This course accomplishes the [Quest](#) and [General Education](#) objectives of the subject areas listed above. A minimum grade of C is required for Quest and General Education credit. Courses intended to satisfy Quest and General Education requirements cannot be taken S-U.

Required Readings and Works

Artificial Intelligence: An Illustrated History: From Medieval Robots to Neural Networks (Sterling Illustrated Histories) Hardcover, used, Kindle and any edition is fine.

Recommended Text (not required): The Math Book: From Pythagoras to the 57th Dimension, 250 Milestones in the History of Mathematics (Sterling Milestones) used, Kindle or any edition is fine.

Official Style Manual

Materials and Supplies Fees: n/a

II. Graded Work

Description of Graded Work

Week	Reading pages numbered in Artificial Intelligence: An Illustrated History or Quiz number due that week
1	Three Hours of Reading in the book - first half of book
2	Three Hours of Reading in the book - second half of book
3	Quiz #1
4	Book Topic Assignment #1
5	Quiz #2
6	Book Topic Assignment #2
7	Quiz #3
8	Midterm Writing Assignment + video + presentation deck (5 slides)
9	Quiz #4
10	Book Topic Assignment #3

11	Quiz #5
12	Book Topic Assignment #4

13	Work on final essay + mid-term presentation
14	Mid-term Presentations Practice Day
15	Mid-term Presentations
16	Final Essay Due

Quizzes

Each Quiz will be a multiple-choice quiz in Canvas, with questions to match 10 words with their definitions. These words will be selected from the student word bank that is in the weekly slide decks for the lessons in class. These words will be common words pertaining to the field of AI and Art, Science and Fiction. Definitions will be provided in class notes or in the book.

Book Topic Assignments

Our Course Book: *Artificial Intelligence: An Illustrated History* has a particular style; it has elements in each of the topics in the book. In these Book topic assignments students will create and write a thoughtful summary of their own topic as if it is part of this book. These are the following elements that make up a topic in the class book:

Elements

- Topic Title
- Minimum 250-word summary of the topic
- A date (when the topic was invented or similar milestone in its lifecycle)
- 'See also' section
- 'Mini-blurb' section at the bottom of the page summarizes in 'tweet-length' the topic at hand
- An illustration

For this assignment, students will need to create their own topic that does **not** appear in the book. This book has its last entry in 2019 and it is in no way a complete book on all topics in AI. Students may choose a topic that is after 2019 and therefore is not in the book or choose a historical topic that does not appear in detail in the book.

Illustrations

The illustrations in this book are unique, they have photorealism, illustration, 3d graphics and diagrams. Students will create their own illustration, from drawing, photos, screen captures, 3D graphics or diagrams, they will be taught how to make diagrams through Miro in class.

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
4 Book Topic assignments- illustrated topics [250 words min] 1 Date + 1 Topic +1 Image = Assignment structure per assignment: 50pts each	200	20
Mid-Term illustrated topics [250 words min] 1 Date + 1 Topic +1 Image +1 Presentation = Assignment structure: 50pts	200	20
5 Multiple Choice quizzes: definitions from course Word Bank (100 words total) - 50 pts each	200	20
Class Participation - Students are expected to actively participate in class discussions, both in class as well as in course online forums and outside class Group meetings.	200	20
Final Essay on a topic approved by the Professor or TA on an interdisciplinary topic in the field of AI. 1,000 words minimum.	200	20

Total Word Count Written by Student Required: 2,250

Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%
B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

Grading Rubric(s)

Writing Assessment Rubric and Statements

	SATISFACTORY (Y)	UNSATISFACTORY (N)
CONTENT	Papers exhibit at least some evidence of ideas that respond to the topic with complexity, critically evaluating and synthesizing sources, and provide at least an adequate discussion with basic understanding of sources.	Papers either include a central idea(s) that is unclear or off-topic or provide only minimal or inadequate discussion of ideas. Papers may also lack sufficient or appropriate sources.
ORGANIZATION AND COHERENCE	Documents and paragraphs exhibit at least some identifiable structure for topics, including a clear thesis statement but may require readers to work to follow progression of ideas.	Documents and paragraphs lack clearly identifiable organization, may lack any coherent sense of logic in associating and organizing ideas, and may also lack transitions and coherence to guide the reader.
ARGUMENT AND SUPPORT	Documents use persuasive and confident presentation of ideas, strongly supported with evidence. At the weak end of the Satisfactory range, documents may provide only generalized discussion of ideas or may provide adequate discussion but rely on weak support for arguments.	Documents make only weak generalizations, providing little or no support, as in summaries or narratives that fail to provide critical analysis.
STYLE	Documents use a writing style with word choice appropriate to the context, genre, and discipline. Sentences should display complexity and logical sentence structure. At a minimum, documents will display a less precise use of vocabulary and an uneven use of sentence structure or a writing style that occasionally veers away from word choice or tone appropriate to the context, genre, and discipline.	Documents rely on word usage that is inappropriate for the context, genre, or discipline. Sentences may be overly long or short with awkward construction. Documents may also use words incorrectly.
MECHANICS	Papers will feature correct or error-free presentation of ideas. At the weak end of the Satisfactory range, papers may contain some spelling, punctuation, or grammatical errors that remain unobtrusive, so they do not muddy the paper's argument or points.	Papers contain so many mechanical or grammatical errors that they impede the reader's understanding or severely undermine the writer's credibility.

- The Writing Requirement (WR) ensures students both maintain their fluency in writing and use writing as a tool to facilitate learning.
- The instructor will evaluate and provide feedback before the end of the course on all of the student's written assignments with respect to grammar, punctuation, clarity, coherence, and organization.
- WR course grades have two components. To receive writing requirement credit, a student must receive a grade of C or higher and a satisfactory completion of the writing component of the course.

Participation Rubric

	High Quality	Average	Needs Improvement
Informed: Shows evidence of having done the assigned work.	Student participation demonstrates a high level of fluency with readings and other preparation for class. Able to contribute to class discussions (both in person and online) with high level of detail.	Student participation demonstrates a moderate level of fluency with readings and other preparation for class. Able to contribute to class discussions (both in person and online) with moderate level of detail.	Student participation demonstrates limited or no fluency with readings and other preparation for class. Unable to contribute to class discussions (in person and online) with any detail.

Thoughtful: Shows evidence of having understood and considered issues raised.	Student is able to contribute in meaningful ways to discussions, asks thoughtful and well-informed questions, able to back up a position with considered evidence and share their perspective on the issues raised.	Student is able to contribute to discussions, asks thoughtful questions, is able to back up a position and share their perspective on the issues raised.	Student is unable to contribute in meaningful ways to discussions, asks no questions, asserts a position with no evidence, or has no perspective on the issues raised.
Considerate: Takes the perspective of others into account.	Student listens actively, treats others with respect even when disagreeing. Language used demonstrates a true interest in learning and understanding other perspectives.	Student listens, treats others with respect even when disagreeing.	Student listens poorly, fails to treat others with respect, or otherwise demonstrates a lack of interest in others' ideas and perspectives.

III. Annotated Weekly Schedule

Week	Topics, Homework, and Assignments
Week 1	<ul style="list-style-type: none"> • Topic: AI + Art/Science/Fiction and What is Data • Summary: learn the history we will be covering and position the timeline in the book. Go over key themes, principles, terminology, and theory or methodologies used within the field of AI through the lens of Art, Science and Fiction disciplines. • Required Readings/Works: pages 1-25 • Assignment: watch how to setup your p5.js project in canvas
Week 2	<ul style="list-style-type: none"> • Topic: Simulation and Data Viz • Summary: learn the history of Simulation and Simulacra. Go over key themes, principles, terminology, philosophy and theory or methodologies used with Simulation Hypothesis in fiction, look at Data Visualization to skew opinions. • Required Readings/Works: pages 26-31 • Assignment: Look at another example project in Glitch for p5.js and remix it, take a screenshot of your remix.
Week 3	<ul style="list-style-type: none"> • Topic: Intelligence and Random Numbers and Color Theory. • Summary: learn the history of Machine Intelligence. Go over key themes, principles, terminology, and theory or methodologies used with random number generators and their use with color represented in web colors, digital colors and how random numbers can be used in creative exercises for drawing digitally. P5.js will be used to demonstrate how numbers are connected to color. • Required Readings/Works: pages 32-39 • Assignment: Quiz 1 due by the end of the week
Week 4	<ul style="list-style-type: none"> • Topic: Learning and GANs • Summary: How do we learn? How do we think machines learn? What are human assumptions about learning? This Class we learn the history of GANs and Human assumptions in learning. Go over key themes, principles, terminology, and theory or methodologies used with Style Transfer (Animation) and GANs in regard to generative art and deep learning aesthetics. • Required Readings/Works: pages 40-47 • Assignment: Assignment #1 due by the end of the week

Week	Topics, Homework, and Assignments
Week 5	<ul style="list-style-type: none"> • Topic: Visual Language of AI and Machine Vision • Summary: How do Machines see? History of photography, the mechanical seeing. How mechanical seeing has created new forms of painting, drawing, animation, and fiction. Look at history of surveillance and the state in regard to mechanical observation. • Required Readings/Works: pages 51-56 • Assignment: Quiz #2 due by the end of the week
Week 6	<ul style="list-style-type: none"> • Topic: Robots and Neural Nets • Summary: learn the history of Neural Networks and the use of Robots and AI in fiction. Go over key themes, principles, terminology, and theory or methodologies used with Neural Nets and how they are used to create fiction, writing, poetry, screenwriting, and text. How are robots portrayed in film, television, writing and video games. • Required Readings/Works: pages 57-66 • Assignment: Book topic Assignment #2 due by the end of the week
Week 7	<ul style="list-style-type: none"> • Topic: Antecedent Technology and Natural Language Processing • Summary: learn the history of Natural Language Processing (NLP) and the use of NLP in creative practices, such as poetry, text, art, performance, and film. • Required Readings/Works: pages 67-70 • Assignment: Quiz #3 due by the end of the week
Week 8	<ul style="list-style-type: none"> • Topic: Motion Capture and Ritual • Summary: learn the history of Motion Capture and the use of Motion Capture in creative practices for live performance and dance. Go over key themes, principles, terminology of technologies used in ritual and automation. The history of religious use of mechanical representation of prayer and the sovereignty the European Royals of the medieval period. • Required Readings/Works: pages 71-75 • Assignment: Mid-Term Writing Assignment
Week 9	<ul style="list-style-type: none"> • Topic: Motion Capture and Ritual • Summary: learn the history of Motion Capture and the use of Motion Capture in creative practices. Go over key themes, principles, terminology of technologies used in ritual and automation. How have these changed dance, live performance, poetry, and art. • Required Readings/Works: pages 71-75 • Assignment: Mid-Term Writing Assignment
Week 10	<ul style="list-style-type: none"> • Topic: Human Assisted/Human Replacement and the Singularity • Summary: learn the history of Human Assisted design. Go over key themes, principles, terminology of technologies used in Human Replacement and the concept of the Singularity. How would this change the fields of commercial design, architecture, and city planning. • Required Readings/Works: pages 76-80 • Assignment: Quiz #4 due at the end of the week
Week 11	<ul style="list-style-type: none"> • Topic: Machine Bias and Moral Codes

Week	Topics, Homework, and Assignments
	<ul style="list-style-type: none"> • Summary: learn the history of Machine Bias. Go over key themes, principles, terminology of technologies used in developing an ethical framework for software development and policy making around AI. • Required Readings/Works: pages 81-90 • Assignment: Assignment #3 due at the end of the week
Week 12	<ul style="list-style-type: none"> • Topic: AI Software Architecture and Deus Ex Machina • Summary: learn the history of Deus Ex Machina. Go over key themes, principles, terminology of technologies used in developing AI Software and services, the use of Deus Ex Machina in dramatic arts and literature. • Required Readings/Works: pages 91-104 • Assignment: Quiz#5 due at the end of the week
Week 13	<ul style="list-style-type: none"> • Topic: Bots and NPC creation in Video Games • Summary: learn the history of chatbots. Go over key themes, principles, terminology of technologies used in developing Chatbots and NPC creation in Video Games, their influence on psychology, video games, literature, and interactive media. • Assignment: Quiz#5 due at the end of the week
Week 14	<ul style="list-style-type: none"> • Topic: Software Architecture and Weapons Grade AI • Summary: learn the history of weapons grade AI. Go over key themes, principles, terminology of technologies used in developing AI software and services part 2. Themes of nation sovereignty, policy of war, international advocacy, the UN, the movements around regulation of AI in war. • Assignment: Book topic Assignment #4 due at the end of the week
Week 15	<ul style="list-style-type: none"> • Topic: Machine Bias Part 2 and Practice for Presentations • Summary: learn the history of bias in AI and how it impacts diverse cultures who are observed with machine vision and what decisions in policy are influenced by machine bias. • Assignment: Work on presentations • Topic: Presentations and What is at Stake? • Summary: Student Presentations of midterm lightning talks and summary of What is at Stake with AI. • Assignment: Work on Final Essay

IV. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the Quest and General Education learning outcomes as follows:

Content: Students demonstrate competence in the terminology, concepts, theories, and methodologies used within the discipline of AI and the Arts. (Quest 1, H).

- Identify, describe, and explain AI terms and concepts that define what AI is used for, what it is, and what is at stake in our culture regarding the field of AI and the Arts(Quest 1, H).

- Assessments: Book topic assignments, exams, lightning presentation, final paper. (Quest 1, H).
- Identify, describe, and explain the role of AI comparative fields of Art, Science and Fiction and how this multiplicity of perspectives aids in an understanding of the cultural significance of AI, and how cultural factors have helped shape the field. (Quest 1, H).
- Assessments: Book topic assignments, exams, lightning presentation, and a final paper. (Quest 1, H).

Critical Thinking: Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline of AI and the Arts.

- Critically analyze and evaluate qualitative and quantitative data derived from the field of AI and the application of machine learning technologies in the Arts, Sciences and Fiction, with an eye to how methodologies in these disciplines function, differ or overlap. (Quest 1, H).
- Assessments: Book topic assignments, exams, lightning presentation, and a final paper.
- Critically evaluate and assess the contribution of the analysis of the field of AI and its development, with respect to what is known (not known, and unknowable) in the history of the field from ancient to modern times. (Quest 1, H).
- Assessments: Book topic assignments, exams, lightning presentation, and a final paper.

Communication: Students communicate knowledge, ideas, and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).

- Develop and present in writing an exploration of how the multifaceted histories of AI help us better understand what is at stake in the future of AI. (Quest 1, H).
- Assessments: Book topic assignments, lightning presentation, and final paper.
- Participate effectively in robust discussions of the history, methodologies, ethics, and implications of AI for the future of the arts, the human race, and the planet. (Quest 1)
- Assessments: Participation rubric

Connection: Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond.

- Analyze and compare the content in the book with the supplemental educational material as well as their engagement with creative coding. (Quest 1).
- Assessments: Lightning presentation, and final paper.
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V. Quest Learning Experiences

1. Details of Experiential Learning Component

Students will have Creative Coding assignments that they can do on any internet enabled device. They will explore themes of AI and the Arts through their interaction with creative code. These reflections will be asynchronous and done via Canvas and the internet browser of the student's choice. Students will discuss how each core machine learning and AI topic will help them to investigate AI from the perspectives of Art, Science, and Fiction help to uncover the history, present, future, and implications of AI.

2. Details of Self-Reflection Component

Students will have Self-Reflection Components in the form of responses and creative coding activities.

that they will submit via their assignments in Canvas. Students will have example code, they can modify, their success is not based on coding ability but engagement with the material, and an interest in looking at the technical side of machine learning and AI in addition to the applications of AI in the weekly discussions. They will submit screen shots of their experiments input and output. This uses a coding gradient those with no coding background can use this as a playground to discover interesting things, those with stronger coding abilities may find new ways to look at and engage with machine learning and AI subject matter. Students will be expected to participate in in-depth discussion of lecture materials and readings during the break-out sections and online. As reflected in the participation rubric, informed, thoughtful, and considerate participation is expected. There will be in class discussions, TA led discussions, online discussion boards in canvas, and replies to other's discussions in boards in canvas.

VI. Required Policies

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.