ART 4612C/6925C Digital Media Workshop is a revolving topics, studio workshop. This semester we will explore ARTificial intelligence. We will learn about the history and theory of AI in computing from a scientific, mythological, and material viewpoint. We will investigate it from a “pharmacological” position that is deeply critical, yet simultaneously analytical with regard to its potential. Not only will we gain a literate understanding of AI, but we will learn “heuristically”: we will learn through the act of making. Students will materially engage AI as a medium for the production of art works. Experience with digital image practices, computer modeling and programming are recommended, but not required.

The class is a hands-on, art studio, experimental workshop. It is project-based and students will propose work that explores their own practice using artificial intelligence as a medium or source of inspiration. Sample project ideas include but are not limited to: simulations, networked experiences, generative audio, generative imagery (still and motion), info-viz, general research, etc.

As a Senior-level and Graduate-level course, you develop your own project ideas (with our help). Your primary task is to challenge your own abilities and push the boundaries
Digital Media Workshop
Experiments in ARTificial Intelligence
art with machines

Years taught: Fall 2021
[background: Uumwelt, 2018 by Pierre Huyghe - segment]

Credits: 3: Prereq: ART 2620C (Net Art) or with permission of faculty.

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stenner@ufl.edu

Undergraduate: ART 4612c Section 11633
Graduate: ART 6925c Section 11699
Class: PHYSICAL – Fine Arts Bldg C Room 302
Time: T/Th 8:30AM – 11:30AM
Website: http://jackstenner.com/teaching/ai
Listserv: Class contact will be made UF email and via Discord (evite to be posted)

Objectives

Over the course of the semester, the goal is to help you develop your art practice in the following ways:

1. Context
   Become aware of the history and material foundation of AI.

2. Synthesis
   Learn the appropriate integration of digital processes.

3. Criticality
   Engage meaningful discussion and develop criticality.

4. Awareness
   Gain an awareness of related work in the field.

5. Communicate
   Propose ideas in a way that clearly demonstrates intent.

6. FUN
   Have FUN!
Grades will be based 90% on projects, reviews, and class assignments. 10% will be based on class participation. See below for the breakdown. Participation means you are expected to constructively criticize your peers and participate in class discussions. Failure to do so will impact your participation grade.

Notwithstanding the description of grades above, generally, grades are conceived in this way:

A(Excellent) Student’s work is of exceptional quality and the solutions to problems show a depth of understanding of the program requirements. Project is fully developed and presented well both orally and graphically. Student has developed a strong and appropriate concept that clearly enhances the overall solution. The full potential of the problem has been realized and demonstrated.

B(Good) Student’s work shows above average understanding and clear potential. All program requirements are fulfilled and clearly and concisely presented.

C(Fair) Student’s work meets minimum objectives of course and solves major problem requirements. Work shows normal understanding and effort. Quality of project as well as the development of knowledge and skills is average.

D(Poor) Student’s work shows limited understanding and/or effort. Minimum problem requirements have not been met. Quality of project or performance as well as development of knowledge and skills is below average.

F(Failure) Student’s work is unresolved, incomplete and/or unclear. Minimum course objectives or project requirements are not met, and student’s work shows lack of understanding and/or effort. Quality of project or performance is not acceptable.

Instructor’s evaluation of student’s interest, motivation, attendance, proficiency and overall development or improvement during the semester will be taken into consideration in determining the final course grade. This syllabus is subject to refinement and development throughout the semester based on feedback and class interaction. Policies and grading criteria are absolute and will not change. Any substantial changes will be discussed with the class prior to implementation.

Grading breakdown:

Assignments (5) = 50%
Reflections (10) = 20%
Final Project = 20%
Participation = 10%
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.

Despite what some lunatics might say, Covid-19 is STILL a problem. We are required to meet in person this semester, but thankfully there is a vaccine. Please get one! You MUST, at a minimum, follow UF Covid-19 Guidance as a member of this community.

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Projects

Readings will consist of .pdfs and URLs available on the class website. While not required, I highly recommend Atlas of AI by Kate Crawford.
Experiments in ARTificial Intelligence Schedule

AI Schedule

Tuesday 08.24, Thursday 08.26

Week 1: Introduction and Setup

Content:
Syllabus Review
Intro to Experiments in ARTificial Intelligence
Intro to Art, Artists and AI

STUDIO: ZSH Terminal Intro, Development Environment Configuration

SCREEN: Naked AI

Assignment:
Complete the reading(s) below and post reflections on Canvas by next Tuesday.

UF LinkedIn Experiments in ARTificial Intelligence Playlist - Learning Zsh

Readings:

Tuesday 08.31, Thursday 09.02

Week 2: What is AI? History of Machine Intelligence

Content:
Discuss reading(s) assigned last week.

DEMO: Introduction to AI techniques

STUDIO: Experiment with RunwayML

SCREEN: Coded Bias

Assignment:
Complete the reading(s) below and post reflections on Canvas for discussion next week.
Assignment 1: Experiment with RunwayML, prepare for CRIT, post reflection to Canvas.

Readings:

Tuesday 09.07, Thursday 09.09

Week 3: Art, Artists and AI

Content:
Discuss reading(s).

CRIT Assignment for RunwayML experiments.
Screen: Lo and Behold: Reveries of the Connected World, by Werner Herzog.

Assignment:
Complete the reading(s) below and post reflections on Canvas.

Assignment 2 - Create a network-based artwork using p5.js that incorporates still imagery, video and, optionally, some form of interaction.

Readings:

Tuesday 09.14, Thursday 09.16

Week 4: Image Classification 1

Content:
Discuss reading(s).

CRIT: Assignment 2 - P5.js artwork
Learn to implement basic image classification using existing machine learning models.

Assignment:
Complete the reading(s) below and post reflection on Canvas.
Assignment 3 - Image Classification Artwork 1

Readings:

Tuesday 09.21, Thursday 09.23

Week 5: Image Classification 2

Content:
Discuss reading(s).

Saving and loading training models, exploring multiple techniques.
Google Colab and Jupyter Notebooks

Assignment:
Continue developing Assignment 3 - Image Classification Artwork 1

Readings:
None

Tuesday 09.28, Thursday 09.30

Week 6: Object Detection, Computer Vision

Content:
CRIT: Assignment 3 - Image Classification Artwork 1
Learn to implement Object Detection.

Assignment:
Complete the reading(s) below and post reflection on Canvas.
Assignment 4 - Create an artwork using Object Detection

Readings:
Boden, Margaret A., and Ernest A. Edmonds. "Explaining the Ineffable." In From Fingers to Digits: An Artificial Aesthetic, 61-89. The MIT Press,
Tuesday 10.05, Thursday 10.07

Week 7: Transfer Learning

Content:
Discuss reading(s).
Learn to create and train your own neural network.

Assignment:
Continue development of Assignment 4 - Object Detection Artwork

Readings:
None

Tuesday 10.12, Thursday 10.14

Week 8: More Neural Networks

Content:
CRIT: Assignment 4 - Object Detection Artwork
Learn to work with various NN types and processes (CNN, kNN, GAN).

Assignment:
Complete the reading(s) below and post reflection on Canvas.
Assignment 5 - Create an experimental AI artwork.

Readings:

Tuesday 10.19, Thursday 10.21

Week 9: More Neural Networks

Content:
Discuss reading(s).
Experiment with StyleGAN, Style Transfer, etc.

Assignment:
Continue development of Assignment 5 - Experimental AI artwork

Readings:
None

Tuesday 10.26,

Week 10: Working with TEXT

Content:
Learn about Sentiment Analysis, GPT2, Text to Image, Word2Vec, etc.
Experiment with inter-application communication using OSC.

Assignment
Complete the reading(s) below and post reflection on Canvas.
Week 11: Sound

Assignment:
Experiment with AI and sound.

Readings:
None

Tuesday 11.09, Thursday 11.11

Week 12: AI and Game Engines

Content:
Understanding Unity ML-Agents and Reinforcement Learning.
STUDIO - Work through Unity3D Hummingbird Tutorial

Assignment:
Complete ML-Agent Hummingbird Tutorial.
BEGIN: Final Project, brainstorm and prepare to present concept in class on Tuesday.
ATTEND: Michael Mandiberg Visiting Artist Talk!

Readings:

Tuesday 11.16, Thursday 11.18

Week 13: AI and Game Engines

Content:
Review Final Project concepts.
STUDIO - Develop AI/Game Engine artwork

Assignment:
Continue work on Final Project - AI/Game Engine artwork

Readings:
None
Tuesday 11.23, Thursday 11.25

Week 14: AI and Game Engine

Content:
STUDIO - Develop AI/Game Engine artwork

Assignment:
Continue work on Final Project - AI/Game Engine artwork

Complete the viewing below and post reflection on Canvas.

Readings:

Tuesday 11.30, Thursday 12.02

Week 15: AI and Game Engine

Content:
STUDIO - Develop AI/Game Engine artwork

Assignment:
Continue work on Final Project - AI/Game Engine artwork

Readings:
None

Tuesday 12.07, Thursday 12.09

Week 16: AI and Game Engine

Content:
STUDIO - Develop AI/Game Engine artwork

Assignment:
FINISH work on Final Project - AI/Game Engine artwork

Readings:
None

Thursday 12.16

Exam Week: Final Exams - final review 7:30AM - 9:30AM.

FINAL CRITIQUE
ARTificial Intelligence Resources

back to Experiments in ARTificial Intelligence
back to Full Luxury AI

My Support Forum
ARTISTS

Artists who incorporate artificial intelligence in their practice.

Use the filters to narrow your focus on specific topics.
Return to ARTificial Intelligence Resources

The artists below are dynamically retrieved from my bookmarking application. Please feel free to send links to artists you think should be included.

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<td>A Data Artist’s Guide to Putting People (and Privacy) First</td>
<td>Fri, 05/07/2021 - 02:59</td>
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<td>Mon, 09/10/2018 - 05:16</td>
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<td>Beck - Hyperlife (Hyperspace: A.I. Exploration) - YouTube</td>
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<td>10.1: Introduction to Neural Networks - The Nature of Code - YouTube</td>
<td>Sat, 07/31/2021 - 09:22</td>
<td>javascript, js, ai, artificial_intelligence, syllabus, technology, experimentsinai</td>
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<td>AI Explorables</td>
<td>Fri, 07/30/2021 - 03:53</td>
<td>ai, artificial_intelligence, machine_learning, syllabus, experimentsinai, aiseinai, technology, theory</td>
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<td>An Intuitive Explanation of Convolutional Neural Networks – the data science blog</td>
<td>Tue, 08/03/2021</td>
<td>cnn, neural_network, ai, artificial_intelligence, technology, syllabus, experimentsinai</td>
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THEORY

Some of the ways we think about it.

from Silver Peak Lithium Mine by Kate Crawford.

Use the filters to narrow your focus on specific topics.
Return to ARTificial Intelligence Resources

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<td>Cybertopia - Dreams of Silicon Valley - Docu - 2015 - YouTube</td>
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A+T Facilities
by jstener on Wed Mar 17, 2012 12:02 pm

SOUND ROOM: Using Pro Tools HD Native
by jstener on Tue Apr 02, 2013 7:06 am

BrightSign Getting Started
by jstener on Thu Mar 01, 2012 8:17 am

BrightSign video preparation
by jstener on Thu Mar 01, 2012 8:17 am

BLACK BOX - FAC 302
by jstener on Thu Oct 10, 2017 7:11 am

RED Epic Dragon AND RED Raven
by jstener on Mon Feb 25, 2013 2:24 pm

302 Plasma Instructions
by mohrle on Fri Sep 27, 2013 11:17 am

Quick Maya - V-Ray - EXR to After Effects Workflow 04.26.2021
by jstener on Apr 27, 2021 4:08 am

Smooth Preview Render in Vray
by jstener on Apr 14, 2021, 4:12 am

Turntable beauty and wire-frame render via Maya and V-Ray: 01,30,2021
by jstener on Jul 30, 2021, 1:09 pm

Basic Unity3D Glow demo: 12.02.2020
by jstener on Dec 02, 2020 12:55 pm

Basic Unity3D pathfinding using NavMesh demo: 10.29.2020
by jstener on Nov 26, 2020 5:36 pm

Basic Maya to Unity3D BlendShape Demo: 10:29.2020
by jstener on Nov 29, 2020, 4:56 pm

Unity, Maya, Cinemachine, Particle Sprite Demo: 10.08.2020
by jstener on Oct 13, 2020, 2:44 am

ABA Class Workflow 2019
by jstener on Mar 08, 2019, 7:27 am

Recording Audio with Zoom F8 Field Recorder
by jstener on Sep 26, 2018, 1:10 pm

OVERVIEW: A+T Motion Composite Workflow
by jstener on Apr 03, 2018, 3:40 am

Capturing HDRi Spherical Images with Canon 5D and Nodal Ninja
by Jstener on Apr 03, 2018, 6:13 am

Shooting: Filtration
by jstener on Apr 03, 2018, 9:00 am

Red Mag Reader Connections
by mohrle on Oct 16, 2016 2:38 am

Panasonic GH4 Info
by jstener on May 18, 2016, 3:36 pm

A+T Microphone Info
by jstener on Feb 04, 2015 6:37 am

Canon 5D Skill and Magic Lantern
by jstener on Sep 29, 2014 10:47 am

HTML5 Video Preparation [OBSCURE]
by jstener on Nov 27, 2013 9:34 am