

LMC 6310 The Computer as an Expressive Medium – Fall 2017

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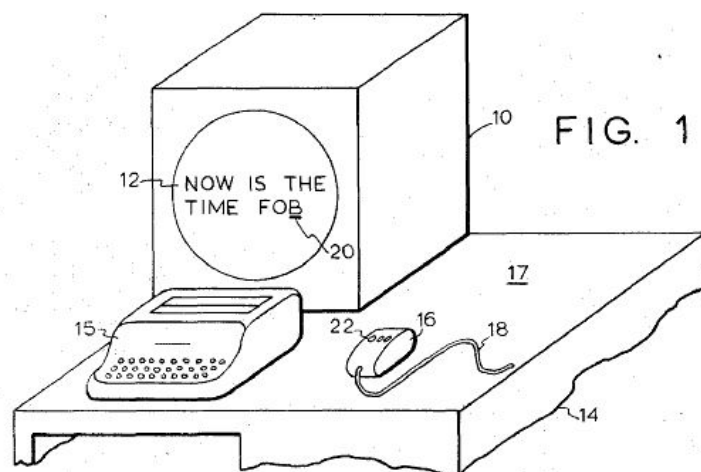
bmagerko on Skype

TSRB Room 309

Office Hours: By appointment

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Office Hours: Friday 2:00pm – 5:00pm



Course Description

The goal of this course is to gain computational literacy in the context of programming as an art and design practice; that is, to understand computation as an expressive medium. We will juxtapose reading and discussion of seminal works in computational media with programming projects designed to exercise specific technical skills as well as encourage conceptual explorations in computational art and design. Anyone working in new media will eventually be involved on interdisciplinary projects in which the ability to program will be a strong asset, if not a necessity. Even if in your future career as an artist or designer means that programming is not a large part of your practice, this course will empower you to communicate confidently with programmers, and thus deepen your interdisciplinary collaborations. This is a class where we learn how to make with a purpose.

M.S. Learning Objectives

- Demonstrate knowledge, comprehension, and application of the tools and formal design elements of digital media design.
- Demonstrate the ability to devise, design, create, and assess prototypical digital media artifacts, services, or environments and to contextualize them within recognized traditions of practice.
- Justify the design choices in their works
- Develop digital media artifacts
- Demonstrate ability to set up and use common tools for writing code and managing the software development process

Ph.D. Learning Objectives

- Students can identify and analyze a domain within the field digital media and identify areas for original contribution as well as methods to pursue these contributions.
- Students can formulate original interpretations and design original prototypes that reflect an understanding of the humanistic context of digital media.
- Apply theoretical concepts to specific digital media works
- Identify and define a suitable research problem in digital media design and apply appropriate disciplinary or interdisciplinary research methods to address it.

In addition, both M.S. and Ph.D. students should have three portfolio worthy projects that demonstrate their skills in expressive computing. Some subset of these (particularly Project 3) should be presented at Interactivity @ GT in the spring term. Go [here](#) for a look at recent Interactivity student portfolio work. This is the bar you should expect to meet and exceed.

Logistics

Discussion	M, W	10:10am-11am	Skiles 002
Lab	F	11:15am-2pm	Skiles 346 (DM Lab)

Expectations

Class participation (10 %)

Preparedness for and active participation in class discussions and project critiques.

Lab participation (10%)

Preparedness for and active participation in lab exercises, discussions and critiques.

Projects (80 %)

There are three projects. The first project counts for 20% of the final grade; the second and third for 30% each. For details see the project description documents below.

Grading

The projects are the main work for the semester: completing all requirements reasonably well equates to a B grade (80-89%). An A grade (90-100%) is earned by exceptional work that goes “above and beyond” the requirements.

Materials`

Students will be required to buy any needed materials, including a webcam, LeapMotion or Microsoft Kinect, for their final project. There are limited materials available in the ADAM Lab to use as well.

Any additional readings and resources will be be linked to from this document.

Required: JavaScript: The Good Parts

Suggested:

- [W3 Schools for JavaScript](#)
- [Making Things See by Borenstein](#)
- Anthony Dunne and Fiona Raby, *Speculative Everything*
- *Eloquent Javascript: A modern introduction to programming* (pdf available)

Note: stackoverflow.com is a popular, though harsh, environment for finding answers to coding questions. Use with care.

Policies

Lateness

Please submit assignments on the day they are due, no matter their state. It won't be accepted otherwise and will receive a 0%.

Student Responsibilities

Students are expected to indicate the source and authorship of any work not original to them. Students are expected to come to class prepared and to attend to and actively respond to presentations by the instructor and fellow students. All students will have access to the DM Lab in Skiles 346 and are expected to abide by the rules of that lab, including never propping open doors or leaving the room unlocked. Students are expected to refrain from distracting and disruptive behaviors in class and in the shared lab and to treat one another with professional respect and courtesy.

Students are expected to backup all of their work often.

Course Schedule

8/21 Course introduction
8/23 Lecture: Fundamentals

Readings:

- EarSketch Unit 1.1 - 1.3
- <http://www.complexification.net/gallery/>
- [Variables in JavaScript](#)
- [Text Rain](#)
- [Wooden Mirror](#)

8/24 Lab 1: EarSketch 1

Readings:

- EarSketch Unit 1
-

8/28 Lecture: Abstraction

Readings:

- Bring a tune to share that exhibits clear structure and /or repetition with variation
- EarSketch Unit 2

Project 1: Computational Music Remix (released)

8/30 Lecture: Abstraction

8/31 Lab 2: EarSketch 2

9/4 (LABOR DAY NO CLASS)

9/6 Lecture: Aesthetic Form, Interactivity, and Randomness

Readings:

- EarSketch Unit 7
- [Algorithmic Composition](#) by Edwards
- Find & be able to share 2 songs with differing musical structures
- Find & be able to discuss 2 different narrative structures (e.g. The Hero's Journey)

9/8 Lab 3: EarSketch 3

9/11 P1 Critiques

Readings: [How to Survive a Critique](#)

- 9/13 Lecture: Data-driven Design
Readings:
- EarSketch Ch. 22 & 23.
 - Find an interesting data visualization to share on slack

9/15 Lab 4: EarSketch 4

- 9/18 Lecture: Recursion
Readings:
- EarSketch Ch. 25
 - Examine <http://recursivedrawing.com/>
 - [New Media Reader Ch. 9](#) (suggested)

9/20 P1 Critiques

9/22 Lab 5

- 9/25 Lecture: Introduction to p5
Readings:
- Download & install p5

Project 2: Twitter Poetry (released)

- 9/27 Lecture: 2D Imagery in p5
Readings:
- Consider the use of social creativity in [SwarmSketch](#)
 - find compelling [demoscene examples](#)

9/29 Lab 6: Interactive Lines

Project 1: Computational Music Remix (due 9/29 11:59pm)

10/2 Lecture: Coding questions w/ Jude

10/4 Lecture: Dredging the Net w/ TBD

- Readings:
- [Listening Post](#)
 - [Twitter visualizations](#)
 - <http://www.civicdatadesignlab.org/>

10/6 Lab 7: scraping twitter with p5

- 10/9 FALL BREAK - no class
- 10/11 Lecture: Writing a Program / Computational Grammars w/ TBD
- Readings:
- [Anatomy of a program](#)
 - [Context Free Grammars](#)
 - [Summary of poetry generation](#)
 - [GRIOT](#)
- 10/13 Lab 8: Natural language processing (NLP) with RiTa
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- 10/16 TBD
- 10/18 P2 critiques
- 10/20 P2 critiques
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- 10/23 Lab 9: P2 work
- 10/25 Lab 9.: P2 work
- 10/27 Lecture: Interactivity in Space
- Readings:
- [Nam Ch. 5 & 7.3](#)
 - <http://inst-int.com/>
 - [Design IO](#)
 - [Picaroon Orchestra](#)
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Project 2: Twitter Poetry (due TBD)

- 10/30 Lab 10: Webcam sensing
- 11/1 Lab 11: LeapMotion & Gesture
- 11/3 Open lab / P3 brainstorming
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Project 3: P3 proposals due online (due TBD)

- 11/6 Lecture: Gestural interfaces
- Readings:
- [Mazalek](#)
- 11/8 Lecture: AI-based Design

Readings:

- Autonomous Agents
- Expressive AI by Mateas
- Game AI Design Patterns
- Cellular Automata

11/10 Lab 12: Kinect

11/13 P3 critique

11/15 P3 critique

11/17 Lab 13: project work

11/20 Project work

11/22 Thanksgiving - no class

11/24 Thanksgiving - no class

11/27 P3 critiques

11/29 P3 critiques

12/1 Lab: P3 work

12/4 Wrap-up

Project 3: Interactive Installation (project materials due TBD)

12/?, 9am - 11:50am

P3 presentations

2/?/2015

Interactivity @ GT presentations!

Projects

All students are responsible for the assigned readings, attending critiques & presentations, and three individual project assignments.

Links to previous class project descriptions:

- P1: [Computational Music Remix](#)
- P2: [Twitter Poetry](#)
- P3: [Interactive Installation](#)

Fall 2017 projects:

- [P1 Computational Music](#)

Ph.D. students will, in addition to the above, select and present instructor-approved hardware or software technologies to the course during designated lab times. Presentations will include a short review of the technology's historical precursors, an overview of the capabilities of the technology, and a hands-on walkthrough of how to begin using it with the class. This will be included in the Ph.D. students' participation grades.