

# Teaching Portfolio for Aaron Beveridge

## Included in Portfolio:

- Course Summaries
  - Digital Rhetoric as Scholarship
  - Writing through Big Data
  - Text Mining for the Humanities and Social Sciences
  - Physical Computing (Arduino) and the Internet of Things
- Teaching Evaluation Data

## Overview:

I have taught courses at all levels—from first-year composition to graduate business writing. This portfolio focuses on the special topics courses and trainings I have designed, as well as providing the data from student evaluations at the University of Florida. The first two summaries “Digital Rhetoric as Scholarship” and “Writing through Big Data” provide overviews for two courses I designed for the English Department.

The next two summaries “Text Mining for the Humanities and Social Sciences” and “Physical Computing and the Internet of Things” provide overviews for trainings that I developed for the Trace Innovations Initiative, the Digital Humanities Bootcamp, and the Marston Science Library. If hired at Penn State, I can expand these trainings into full semester-length courses, as well as making them available as regular trainings provided through the Center for Humanities and Information.

## Teaching Interests:

### Graduate:

Information rhetorics; digital humanities methods; visual rhetoric and visual literacy; technology and media; posthumanism; ecomedia and media ecology; computational methods and data literacy; research methods; maker culture and the internet of things; writing theory and the teaching of writing

### Undergraduate:

Communication; all levels of undergraduate composition; business, technical, and professional writing; writing across the curriculum; digital rhetoric

# Digital Rhetoric as Scholarship

## Course Overview:

In this course students produce digital scholarship in one of 4 key areas: academic, professional/vocational, campaign/social movement, or creative/artistic. Relative to their individual scholarly goals, students conduct analyses of how authority and audience are constructed through attention ecologies of digital media. To synthesize their scholarship with their individual attention analyses, students create digital “professional” or “organization” identities in an effort to promote/draw attention to their work.

## Key Themes:

Attention Ecology, Authority, Audience, Digital Rhetoric, Professional Identity, Scholarship, Web Design, Rhetorical Velocity

## Primary/Supplementary Texts:

- James G. Webster's *The Marketplace of Attention* for its comprehensive introduction to new media and attention economics
- Doug Eyman's "Defining and Locating Digital Rhetoric"
- Carolyn R. Miller's "Genre as Social Action"
- Henry Jenkin's introduction to *Spreadable Media*
- Cory Doctorow's *Information Doesn't Want to Be Free* for its discussion of copyright and ownership of digital writing/scholarship/art

## Formal Assignments:

- Collaborative Web Design and Tool Archive:  
Students collaboratively collect links to various web tools for designing websites and for managing social media content. By providing short summaries of the tools and by sharing tutorial videos, students collaboratively assemble the toolset archive for the course
- Attention Analysis Essay:  
The first major assignment for the course. Students conduct an attention/authority analysis of 3 scholars, organizations, or artists successfully established in the field or area of interest the student is considering for the course
- Online Presence/Identity:  
Students edit/revise a current social media account or create a new one for the profession, movement, art-form, or organization supported/promoted by their work in the course
- Final Digital Project:  
A “proof of concept” digital project: website, YouTube channel, blog, or any other form of digital content creation. A complete “proof of concept” will have enough example content created to show the student understands the issues of attention and authority that frame the course

## Pedagogical Approach:

Flipped classroom: All reading responses, reflection, and collaborative archiving occur in digital discussion forums. Classroom time focuses on workshops, web design/digital scholarship, online promotion/identity creation.

**Grading and Feedback:**

Students receive custom rubrics for each assignment. Written feedback is provided for the Attention Analysis Essay, Online Presence/Identity assignment, and for the Final Digital Project. Students are allowed to revise their work to receive higher scores on all major assignments. To do so, they must schedule a conference to meet with me individually prior to completing a revision.

**Course Description:**

For this course, scholarship is broadly defined: Students may revise previous work to submit to a digital journal, create a blog with editorial/opinion content, start a video series/channel with a particular theme, create a portfolio website for displaying artistic work, or propose some other alternative. Once students choose their form of scholarship, they conduct an attention analysis of two other people/organizations currently well-established in the student's area of interest. There are two parts to this analysis: (1) Genre—*what have they produced and how does it contribute to their authority?* (2) Audience—*where have they published/shared their work? How often do they produce new scholarship? In what other ways and how often do they engage their audience/peers?*

As students work on their scholarship throughout the rest of the semester, they produce a collaborative archive of web design tools and content management resources. They also work on their online/professional identities. For most students, this will mean revising current social network identities, producing new ones, or utilizing additional networks to gain attention. Other students may create a personal website or find other ways to bring attention to their work and create an online identity.

# Writing through Big Data

## Course Overview:

In this course, students write about and research social network trends. By collecting, analyzing, and visualizing social network data, students confront the political and ethical concerns of Big Data in order to produce their own data-driven arguments.

## Key Themes:

Digital rhetoric, data literacy, data visualization, trending/viral media, text mining, networked writing, circulation studies, privacy rights/surveillance economy, presentation design

## Primary/Supplementary Texts:

- Nathan Yau's *Data Points* for its approachable introduction to data visualization
- Elizabeth Losh's "Hacking Aristotle: What is Digital Rhetoric?" for its expansion of digital rhetoric to include information science theories
- Clay Shirky's *Here Comes Everyone* for the contrast it provides for the texts/videos below:
  - Eusong Kim's "The Politics of Trending" for its description of blackboxed trending algorithms
  - The documentary "Generation Like" by PBS for its description of the economy of likes.
  - Aral Balkan's "Beyond the Camera Panopticon" for its description of the surveillance economy
- Garr Reynold's *Presentation Zen* for its excellent design principles

## Formal Assignments:

- Collaborative Digital Archive:  
Students write weekly posts about their trends—sharing example text, images, and video about their trend, and responding each week to their classmates' posts.
- Trend Exigence Analysis Essay:  
The first major assignment for the course. Students conduct exigence analyses of their trends—responding to the following questions: *Why does (or why should) the trend matter? How has it (or how could it) gained attention/momentum? Why are (or why should) people participating and responding to the trend?*
- Infographic Design Presentation:  
The infographic design project visually explains the trends researched by the students. For this assignment the students design a visual explanation of their trend in the form of an infographic, and then they present their infographics to the class and explain their design decisions.
- Slideware Research Presentation:  
Intended to resemble an academic conference presentation, all work in the course builds toward the final slideware presentation. For the presentation, students share the results of their trend data collection, and display the data visualizations describing their trends.

## Pedagogical Approach:

Flipped classroom. All reading responses, reflection, and collaborative archiving occurs in digital discussion forums. Classroom time focuses on workshops, visual design, data collection/analysis.

**Grading and Feedback:**

Students receive custom rubrics for each assignment. Written feedback is provided for the Trend Exigence Analysis Essay, Infographic Design Presentation, and for the Slideware Research Presentation. Students are allowed to revise their work to receive higher scores on all major assignments. To do so, they must schedule a conference to meet with me individually prior to completing a revision.

**Course Description:**

Students choose one social network trend to research throughout the entire semester using Twitter data. For the first half of the semester, students answer a basic research question: *What is the exigence of your trend?* Students construct their answers by finding recent news articles or blog posts, by locating exemplary tweets, by collecting digital artifacts circulating within the trend (images, videos, URLs), and by identifying other relevant sub-trends or counter-trends. This culminates in the production of a written analysis of their trend's exigence, and a single page infographic that visually summarizes their trend.

For the second half of the semester, students collect Twitter data on their trend with MassMine. Once they have a corpus of tweets collected, they text mine the corpus for relative word frequencies and word correlations. They also produce a time series analysis to show the trend's activity during their data collection, and they produce a network graph of their data based on the associations among the @usernames, #hashtags, and semantic words in their dataset. Their slideware presentation compares their data analyses to the initial assumptions they formed while constructing their trend's exigence.

# Text Mining for the Humanities and Social Sciences

## Training Overview:

In this training, students are introduced to a broad array of data collection, text mining, and data visualization techniques. Students learn how to compliment well-established rhetorical methodologies with data-driven research. Students finish with an idea of how to develop a research question, manage a long term data collection/archive, and how to mine their archives for insights that support their broader research goals.

## Open Source Software:

- R (Packages: TM, GutenbergR, Rfacebook, topicmodels)
- MassMine

## Data Sources:

- **Social Networks:** Facebook, Twitter, Tumblr
- **General:** Wikipedia, Google Trends, Archive.org, any URL
- **History/Literature:** Project Gutenberg

## Text Resources:

- “Text Mining Resources in R” by Ingo Feinerer, Kurt Hornik, David Meyer
- *Text Analysis with R for Students of Literature* by Matthew Jockers
- “Forum: Text Analysis at Scale” from *Debates in the Digital Humanities* (2016)
- Special Issue on Topic Modeling from *Journal of the Digital Humanities* (2012: Vol. 2, No. 1)

## Description:

This training introduces a broad range of Internet, social network, and text data sources. Prior to analysis, students must first learn about the types of data available, how to collect and archive that data, and most importantly, how to develop a feasible research project based on the limitations of what the data may “say” about their project. Sometimes students already have a research project in mind and need to determine which data sources could support their work. Or, students are interested in researching a particular medium or digital community, and need help refining a research question in order to get started. Once a research question and data source are identified, students collect data and create an archive/corpus for their research.

For many projects, basic quantitative analyses will suffice: corpus descriptions (document length, linguistic variety, time-series), word frequencies, and word correlations. The resulting data can be visualized through basic tables, wordclouds, bar graphs, and line charts.

For more in-depth projects, image/video metadata, demographics data, and location data (including geolocation data) may be collected. The resulting data may be visualized in simple tables or bar graphs, or visualized through traditional point/legend maps or through more complex choropleth maps.

Finally, for projects wanting to show the interconnection of words/artifacts or the latent associations among documents/words in a corpus, network graphs and topic models may be produced. Network graphs can be completed with social network text data, showing the interconnection of @usernames, #hashtags, and semantic words in a corpus (also possible with other text data). Topic models look for the latent topics/ideas among the associated documents in a corpus.

# Physical Computing: Wearable Technologies and the Internet of Things

## Training Overview:

In this training students learn the basics of wearable technologies and the Internet of Things. The open source Arduino microcontroller is an approachable platform for collecting data from sensors, for programming hardware that reacts with physical spaces and other technologies, and for creating DIY gaming projects and gestural interfaces. For everything from tiny microcontrollers embedded in clothing or jewelry (including health monitoring devices) to the remote collection of spatial information or geolocation data, Arduino provides a platform for remote/mobile/interactive information design (“smart” devices). In addition to countless “maker” possibilities, Arduino allows students to easily learn programming basics by inventing physical interactions for code and information.

## Microcontroller:

- Arduino
- Raspberry Pi (optional—for advanced applications)

## Sensors/Hardware/Connectivity:

- **Input:** Image/video, motion, touch, light, heat, distance, weather, heartrate (and many more)
- **Output:** LCD screens, lights, servos, motors
- **Communication:** USB, bluetooth, wifi
- **Remote Data Collection:** SD data logger, Iridium satellite transceiver (global/mobile)

## Additional Text Resources:

- Alan G. Smith's *Introduction to Arduino: A Piece of Cake!*
- Stephen Ramsay and Geoffrey Rockwell's “Developing Things: Notes toward an Epistemology of Building in the Digital Humanities”
- Joyce Locke Carter's 2016 CCCC keynote: “Making, Disrupting, Innovating”
- Philip N. Howard's *Pax Technica: How the Internet of Things may Set Us Free or Lock Us Up*

## Description:

To start the training, students download Arduino's development environment and make sure their Arduinos connect to their laptops through USB. Following setup, students learn to follow a basic schematic to connect a light sensor and a small LED light to their Arduino. The goal is to build and program an interactive light that automatically turns on when the light levels are too low. To do so, they must first learn how to “read” much light their sensor detects. Once they have a range from dark to light, they can write a basic program “loop” that turns on their LED when the reading from the light data falls below a certain threshold and then turns the LED back off when the sensor reads higher amounts of light.

The basic input/output of the LED tutorial is scalable to many other sensor or “smart” technology projects. In addition to the sensor readings the control the LED, students can “log” the sensor data and transmit it through Bluetooth or save it to an SD card. This same basic project could also “receive” new data—to change the logic of how the LED light functions. This “change in logic” can be completed with a basic mobile app designed by the student, or it can be changed over the Internet through WIFI.

Once students learn the basics, they are free to work with additional sensors and communication protocols to develop individual projects.

# Aaron Beveridge | Teaching Evaluations | University of Florida

<div> <div>Term: 2015 Spring</div> <div>College: Liberal Arts and Sciences</div> </div>												
<div> <div>Department(s): English</div> <div>Course(s): ENG1131</div> <div>Section(s): 1788</div> <div>Instructor: Beveridge,Aaron K (6302–4729)</div> <div>Response Rate: 52.63% (responded: 10, enrolled:19)</div> </div>												
Questions	(1)	(2)	Percentages				Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
1. Description of course objectives and assignments	0.00	20.00	10.00	20.00	50.00	0.00	4.00	1.25	4.50	4.36	4.43	4.29
2. Communication of ideas and information	0.00	10.00	0.00	50.00	40.00	0.00	4.20	0.92	4.00	4.53	4.43	4.14
3. Expression of expectations for performance in this class	0.00	0.00	10.00	40.00	50.00	0.00	4.40	0.70	4.50	4.58	4.44	4.24
4. Availability to assist students in or out of class	0.00	0.00	10.00	10.00	80.00	0.00	4.70	0.67	5.00	4.89	4.55	4.23
5. Respect and concern for students	0.00	0.00	0.00	10.00	90.00	0.00	4.90	0.32	5.00	4.94	4.61	4.31
6. Stimulation of interest in course	0.00	0.00	10.00	10.00	80.00	0.00	4.70	0.67	5.00	4.72	4.54	4.15
7. Facilitation of learning	0.00	0.00	10.00	40.00	50.00	0.00	4.40	0.70	4.50	4.58	4.44	4.12
8. Enthusiasm for the subject	0.00	0.00	0.00	10.00	90.00	0.00	4.90	0.32	5.00	4.92	4.78	4.40
9. Encouragement of independent, creative, and critical thinking	0.00	0.00	0.00	20.00	80.00	0.00	4.80	0.42	5.00	4.81	4.65	4.21
Averages for questions 1-9							4.56	0.66	4.72	4.70	4.54	4.23
10. Overall rating of the instructor	0.00	0.00	0.00	10.00	90.00	0.00	4.90	0.32	5.00	4.86	4.54	4.19
11. Amount learned	0.00	10.00	0.00	50.00	40.00	0.00	4.20	0.92	4.00	4.28	4.26	4.00
12. Amount of effort required	0.00	30.00	40.00	10.00	20.00	0.00	3.20	1.14	3.00	3.58	4.06	4.00
13. Difficulty of the subject matter	0.00	30.00	50.00	10.00	10.00	0.00	3.00	0.94	3.00	3.42	3.72	3.83
14. The educational value (relevance) of this course	0.00	30.00	20.00	40.00	10.00	0.00	3.30	1.06	3.50	3.83	4.12	3.98
15. Expected grade	0.00	0.00	0.00	10.00	90.00	0.00	4.90	0.32	5.00	4.67	4.25	4.14
Averages for questions 11-15							3.72	0.88	3.70	3.96	4.08	3.99

<div> <div>Term: 2016 Summer B</div> <div>College: Liberal Arts and Sciences</div> </div>												
<div> <div>Department(s): English</div> <div>Course(s): ENC3310</div> <div>Section(s): 4F72</div> <div>Instructor: Beveridge,Aaron K (6302–4729)</div> <div>Response Rate: 27.27% (responded: 6, enrolled:22)</div> </div>												
Questions	(1)	(2)	Percentages				Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
1. Description of course objectives and assignments	0.00	0.00	16.67	16.67	66.67	0.00	4.50	0.84	5.00	4.50	4.53	4.43
2. Communication of ideas and information	0.00	0.00	0.00	16.67	83.33	0.00	4.83	0.41	5.00	4.83	4.49	4.31
3. Expression of expectations for performance in this class	0.00	0.00	0.00	16.67	83.33	0.00	4.83	0.41	5.00	4.83	4.53	4.40
4. Availability to assist students in or out of class	0.00	0.00	0.00	16.67	83.33	0.00	4.83	0.41	5.00	4.83	4.70	4.42
5. Respect and concern for students	0.00	0.00	0.00	16.67	83.33	0.00	4.83	0.41	5.00	4.83	4.65	4.50
6. Stimulation of interest in course	0.00	0.00	0.00	33.33	66.67	0.00	4.67	0.52	5.00	4.67	4.52	4.32
7. Facilitation of learning	0.00	0.00	0.00	16.67	83.33	0.00	4.83	0.41	5.00	4.83	4.50	4.29
8. Enthusiasm for the subject	0.00	0.00	0.00	33.33	66.67	0.00	4.67	0.52	5.00	4.67	4.70	4.51
9. Encouragement of independent, creative, and critical thinking	0.00	0.00	0.00	0.00	100.00	0.00	5.00	0.00	5.00	5.00	4.55	4.40
Averages for questions 1-9							4.78	0.44	5.00	4.78	4.57	4.40
10. Overall rating of the instructor	0.00	0.00	0.00	33.33	66.67	0.00	4.67	0.52	5.00	4.67	4.57	4.37
11. Amount learned	0.00	0.00	16.67	16.67	66.67	0.00	4.50	0.84	5.00	4.50	4.29	4.15
12. Amount of effort required	0.00	0.00	33.33	50.00	16.67	0.00	3.83	0.75	4.00	3.83	4.08	4.07
13. Difficulty of the subject matter	0.00	0.00	33.33	33.33	33.33	0.00	4.00	0.89	4.00	4.00	3.62	3.74
14. The educational value (relevance) of this course	0.00	0.00	0.00	33.33	66.67	0.00	4.67	0.52	5.00	4.67	4.26	4.02
15. Expected grade	0.00	0.00	16.67	33.33	50.00	0.00	4.33	0.82	4.50	4.33	4.33	4.22
Averages for questions 11-15							4.27	0.76	4.50	4.27	4.12	4.04



Department(s): English

Course(s): ENC5236

Section(s): 2D82

Instructor: Beveridge, Aaron K (6302-4729)

Response Rate: 64.71% (responded: 11, enrolled:17)

Questions	Percentages						Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
	(1)	(2)	(3)	(4)	(5)	Omitted						
1. Description of course objectives and assignments	0.00	0.00	18.18	27.27	54.55	0.00	4.36	0.81	5.00	4.50	4.62	4.47
2. Communication of ideas and information	0.00	0.00	0.00	27.27	72.73	0.00	4.73	0.47	5.00	4.70	4.67	4.38
3. Expression of expectations for performance in this class	0.00	0.00	0.00	36.36	63.64	0.00	4.64	0.50	5.00	4.60	4.56	4.41
4. Availability to assist students in or out of class	0.00	0.00	0.00	27.27	72.73	0.00	4.73	0.47	5.00	4.55	4.72	4.55
5. Respect and concern for students	0.00	0.00	0.00	18.18	81.82	0.00	4.82	0.40	5.00	4.75	4.81	4.65
6. Stimulation of interest in course	0.00	0.00	9.09	36.36	54.55	0.00	4.45	0.69	5.00	4.30	4.71	4.42
7. Facilitation of learning	0.00	0.00	9.09	36.36	54.55	0.00	4.45	0.69	5.00	4.40	4.63	4.39
8. Enthusiasm for the subject	0.00	0.00	0.00	27.27	72.73	0.00	4.73	0.47	5.00	4.75	4.90	4.69
9. Encouragement of independent, creative, and critical thinking	0.00	0.00	0.00	27.27	72.73	0.00	4.73	0.47	5.00	4.68	4.80	4.51
Averages for questions 1-9							4.63	0.55	5.00	4.58	4.71	4.50
10. Overall rating of the instructor	0.00	0.00	0.00	36.36	63.64	0.00	4.64	0.50	5.00	4.65	4.71	4.49
11. Amount learned	0.00	9.09	9.09	45.45	36.36	0.00	4.09	0.94	4.00	4.05	4.50	4.32
12. Amount of effort required	0.00	9.09	36.36	36.36	18.18	0.00	3.64	0.92	4.00	3.75	4.37	4.19
13. Difficulty of the subject matter	9.09	0.00	54.55	18.18	18.18	0.00	3.36	1.12	3.00	3.60	4.28	4.11
14. The educational value (relevance) of this course	0.00	9.09	18.18	0.00	72.73	0.00	4.36	1.12	5.00	4.40	4.69	4.50
15. Expected grade	0.00	0.00	0.00	18.18	81.82	0.00	4.82	0.40	5.00	4.85	4.69	4.38
Averages for questions 11-15							4.05	0.90	4.20	4.13	4.51	4.30