

MEDILL

PETITION OF ACADEMIC STANDARDS COVER FORM

Student: Please complete this section

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Date Submitted: December 10, 2012

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Undergraduate Year of Study (e.g. BSJ 10) BSJ 14

Graduate Degree/Concentration _____

Expected date of degree completion June 2014

Petition Request Replace JOUR 320 with independent study on data

visualization as outlined in following documents

Signature

Tyler Fisher Date 12/10/12

**Submit completed petitions to Keri Disch, Director of Student Life,
Suite 100 Fisk Hall, Evanston Campus
Phone: 847-491-4484
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kdisch@northwestern.edu**

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Comments:

Approved ___ Not Approved ___ Date _____ Signature _____

Independent Study Cover Letter

For Winter Quarter 2013, I hope to replace my requirement of taking Journalism 320 — Interactive News with an independent study on interactive data visualization that will further my skills better than the standard Interactive News course.

For the past two years, I have been building my skills as an interactive web developer in the field of journalism. I have served as the interactive editor of *North by Northwestern* for over a year, and currently, I am the webmaster of the site. This requires me to have expert familiarity with not only HTML, CSS, and JavaScript — the primary languages that Interactive News teaches — but also more advanced programming languages such as Python and SQL.

Furthermore, I developed these skills under the tutelage of professional news applications teams during my internship with the *Chicago Tribune* News Applications Team as well as working with the Knight News Innovation Lab. Much of the Interactive News syllabus teaches the fundamentals of HTML, CSS, and JavaScript, something I have already mastered not only through my direct experience with the languages but also through equivalent courses in the Computer Science department (EECS 130, EECS 330) and in Medill itself (Innovations in Journalism and Technology, Advanced Interactive and Design). I received an A in each of these classes.

But I want to expand my skills in a new direction. My learning goal for the quarter is better understand how to tell stories through data. I want to explore data gathering, analysis and presentation.

To do so I've crafted an independent study that will help me achieve those goals and learn new skills. I have found that, while I have developed good web development skills, I have never used them to do my *own* storytelling. That, ultimately, is the goal of this independent study. I hope to produce a comprehensive, engaging data presentation that tells an original story. The three main skills I plan on learning are:

1. Programmatically perform statistical analysis on a set of data using R or similar tool.
2. Develop data visualizations with d3.js or a similar tool.
3. Design engaging presentations that are both attractive and useful for narrative storytelling.

This independent study, through extensive reading and direct application, attempts to teach me these skills by seeing the development of a large-scale data project from beginning to end, from organizing the dataset, to finding a story within the dataset, to developing and designing the final presentation of the dataset. By the end of the quarter, I hope to have connected my traditional journalism education — my news judgment, storytelling principles, and journalistic ethos — with my more modern skills — web development, design, and workflow. Please see the attached syllabus for information on particular readings and a timeline on the work to be completed. Feel free to contact me for more information about the proposal.

Thank you,
Tyler Fisher

Telling Stories with Data via Programming

Independent Study Proposal: Faculty Sponsorship

With my support and guidance Tyler Fisher has developed a syllabus for a quarter-long exploration of data gathering, analysis, visualization and presentation. His independent study is a mix of readings, discussion and project work.

I look forward to supervising his project because the work and methods he will employ mirror my own research interests and make him better able to participate in future projects with me.

As part of the structure of the independent study Asst. Professor Emily Withrow and I will meet with him weekly.

I believe Tyler's project will be a great educational experience and will also offer high-quality, practical experience. Hopefully his final deliverable can be published professionally and will help him in his job/internship searches.

Please let me know if you have any questions or concerns,

Jeremy Gilbert

Asst. Professor, Media Product Design

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Medill School of Journalism & Segal Institute of Design

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McCormick Tribune Center 4-125

Evanston, IL 60208

Prospective Syllabus

Prerequisites: Find a dataset that you will investigate throughout the quarter.

Week 1

INTRODUCTION TO STATISTICAL JOURNALISM AND METHODS

Read: Precision Journalism, Philip Meyer

Do: R in Action, Robert I. Kabacoff, Parts I and II

Week 2

ORGANIZING THE DATA

Read: Visualize This, Nathan Yau, ch. 1–3

Do: R in Action, Robert I. Kabacoff, Part III and ch. 16

Organize data into a usable format (with help from ch. 2 of Visualize This)

Week 3

CHOOSING STORIES AND CHOOSING TOOLS

Read: Visualize This, Nathan Yau, ch. 4–9

Do: Use new R skills to find a story in the dataset.

Interactive Data Visualization for the Web, Scott Murray (for d3.js, find something else if another visualization tool is chosen)

Week 4

STORYBOARDING AND PROTOTYPING

Read: The Visual Display of Quantitative Design, Edward Tufte

Explore as many existing data visualizations as possible for inspiration (always be doing this, but pay particular attention this week).

Do: Prototype visualizations that tell the story (pen + paper, R, d3.js, or otherwise)

Week 5

CREATING THE DEVELOPMENT ENVIRONMENT

Read: Getting Real, 37signals (I have five weeks from here to build a whole data presentation. I’d better learn how.)

Do: Begin development of the final project as it will appear on the web. This means creating the development environment (Django app tied to previously organized database or whatever) and moving prototyped versions into the new environment. If pairing with a publication, replicate their development environment locally.

Week 6

BEGINNING OF THE END

Read: Show Me the Numbers, Stephen Few

Do: Begin work on the first iteration.

Week 7

ITERATION 1

Read: Universal Principles of Design, William Lidwell

Do: Finish the first iteration (basic states, no interactivity)

Week 8

ITERATION 2

Read: ?

Do: Finish the second iteration (improvements from the first, basic interactivity)

Week 9

ITERATION 3

Read: ?

Do: Finish the third iteration (essentially final, one more time for corrections, demo for paired publication if necessary)

Week 10

FINAL ITERATION / LAUNCH

Read: ?

Do: Finish the final iteration and launch the project (either deploy to own hosted server or publish with paired publication)

Grading Policy

Readings: 20% of grade. Assessment of completion of readings will happen through discussion of topics in reading during weekly meetings with advisors.

Tutorials (R in Action, d3 tutorials): 30% of grade. Assessment of completion will happen through demonstration of the lesson tutorials during weekly meetings with advisors. Focus will be on the student’s grasp of the concepts provided in the tutorial, not on whether the directions of the tutorial were followed explicitly.

Final project: 50% of grade. Each of the three iterations will receive 10% of the grade, while the final product will receive the remaining 20% of the grade. Assessment of the iterations will happen through demosntration during weekly meetings, and the final project will include a more formal presentation of the project, hopefully to a wider audience. The following aspects of the project will be assessed:

- Overall design: Is the design aesthetically pleasing? Is it easy to follow? Does the design allow the story to be told effectively?
- Interactivity: Do all of the interactive functions work as expected? Does the interactivity add anything to the story being told?
- Storytelling: Is the story told by the data compelling and interesting? Is the story told well, or are components missing that would make the story understandable?
- Statistical analysis: Is the statistical analysis correct? Are the numbers presented misleading in any way?