SURF Research Proposal Form

**This proposal form is for all students applying to: SURF L&S, SURF Rose Hills Independent, or SURF Rose Hills Experience. This is NOT the correct application form for the Math Team OR SURF-SMART.

NOTE: We recommend that students design their research projects based on the assumption that current COVID conditions and restrictions will remain in place through the summer of 2021.

For students who intend to do lab work- SURF supports what you and your PI/mentor agree upon and receive approval for - note that lab proposals are subject to approval by the university, and SURF is not involved in that process.

Regarding travel and access to special sites or interview subjects: SURF supports what you and your mentor agree upon and receive approval for from the university and other relevant parties; SURF is not involved in that process.

Application

Your Name (as it appears in Cal Central): Mallen Clifton
Your UC Berkeley email: meclifton@berkeley.edu

Instructions: The SURF proposal has five sections. Each section specifies how long your response should be (approximate word number). Please keep your responses single-spaced and use a 12pt font. While it is useful and appropriate to use technical language in parts of your proposal (terms specific to your discipline), you should aim to have your proposal understandable to a more general academic audience. Avoid jargon or overly abstract phrasings. Type or paste in your responses to the five prompts below. When you are finished, save the document as a PDF with a filename in this format: **ProposalYourLastName.pdf (example: ProposalSmith.pdf)**
You will be asked to upload this completed PDF research proposal form when you submit your application online.

1. Research Statement Summary: 150-200 words. What specific question will you pursue with your research and why is it important to the field? This section enables you to give the reviewers an overview of your project. Keep in mind that other sections give you an opportunity to develop more details around the background, methodology, and rationale for the project.

The home page of website *The Unknown* opens to a black background surrounding an aged, digitized photograph of five men, underneath which is the text, "*The Unknown*: The Original Great American Hypertext Novel" ("Entering the Unknown…," 1998). *The Unknown* is a piece of electronic literature—"work with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer" (Hayles, 2007)—in the genre of hypertext fiction. Hypertext fiction itself is literature that links pages through hypertext to create new kinds of narratives.

As
a genre in a field of writing that has only emerged with the rise of computers, these narrative possibilities are just beginning to be explored and discussed.

I propose that graph theory, a field of mathematics dedicated to studying vertices (comparable to pages on the web) and the edges that connect them (comparable to the links between pages) can expand discussion on hypertext fiction in an entirely new dimension. More specifically, I plan to analyze *The Unknown* as a graph and then compare the spatiality that this visualization affords to *The Unknown*'s narrative and literary meaning(s). The value of this research is two-sided: not only does it introduce cutting edge methods of digital analysis into literature, but it also allows graph theory and thus mathematics to be elevated to a field of study that can be used to produce not only quantitative research but also deeper, poetic meaning.

2. Background to the Topic and Rationale for Your Research: 300-400 words. What is already known about the field of research you will be working on? How does your research project fit in with what is currently being done in the field, and how does it build upon knowledge on the topic or fill in gaps in the field? Please cite references from the literature when applicable; these citations should be listed in #5 of this proposal.

Hypertext fiction can be defined as "Text composed of blocks of words (or images) linked electronically by multiple paths, chains, or trails in an open-ended, perpetually unfinished textuality." (Landow, 1992) (Figure 1). By connecting fragments of the text through multiple links rather than the single, linear pages of a book, this allows for a nonlinear narrative that branches and splinters with each web page, a sort of story prism. The central ideas of hypertext fiction can be seen today in interactive fiction games, journalistic interactive narratives, and even narrative social media (Aarseth, 1997; Johnson, 2013). There has been significant discussion centered around the poetic possibilities of the link (Rettberg, 2002; Parker, 2001), as well as studies into the overall graph structure of nonlinear media (Douglass, 2017), but no notable studies into the poetic possibilities created by these structures. This question is what I hope to explore in my research.

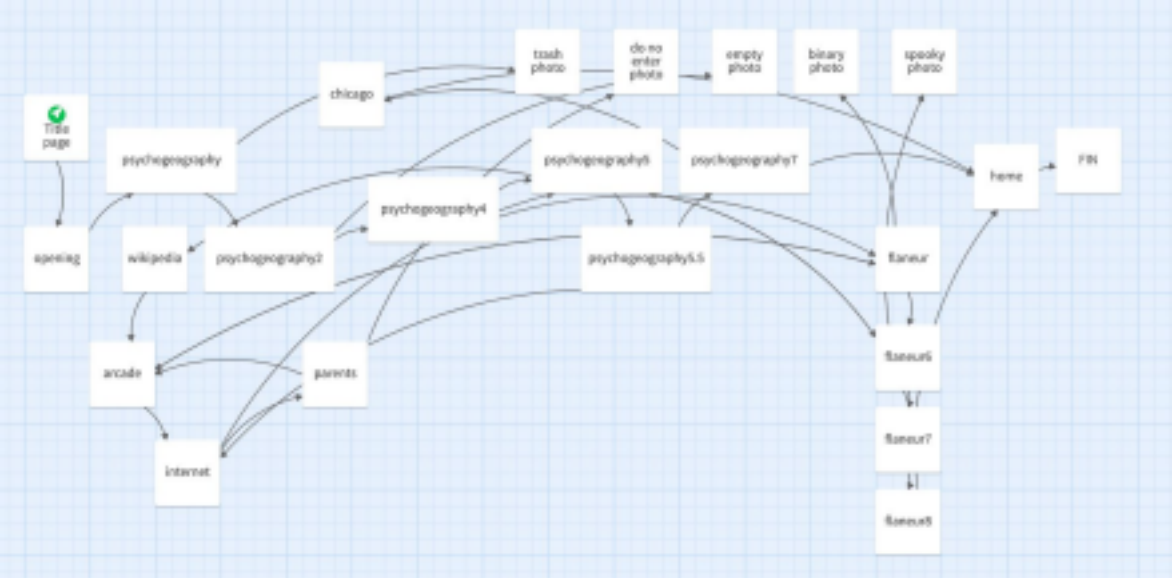


Figure 1: An example of hypertext fiction in progress

I will study hypertext fiction through *The Unknown*, one of the first hypertext fictions to utilize the World Wide Web (Rettberg, 2002). I chose to study this text in particular because it is a seminal hypertext fiction with an abundance of critical literature (“Online Press Kit,” 1998), and because its enormity affords explorability on all scales, including both its overarching shape as well as smaller graphs of sections of the text. I chose to frame my research of hypertext fiction through graph theory because the structure of hypertext fictions lend themselves to being viewed as graphs (Figure 2). As graph theory is an established field of mathematics with definitions, categories, and theorems to characterize various types of graphs, it supplies a vernacular to be able to describe what hypertext fiction can’t as a newer field of interest.

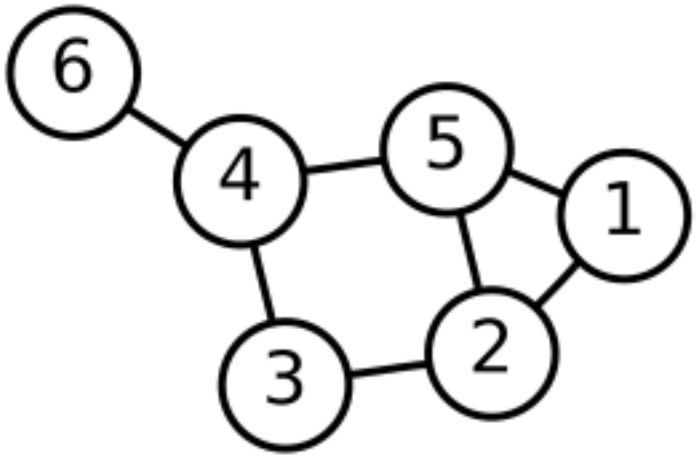


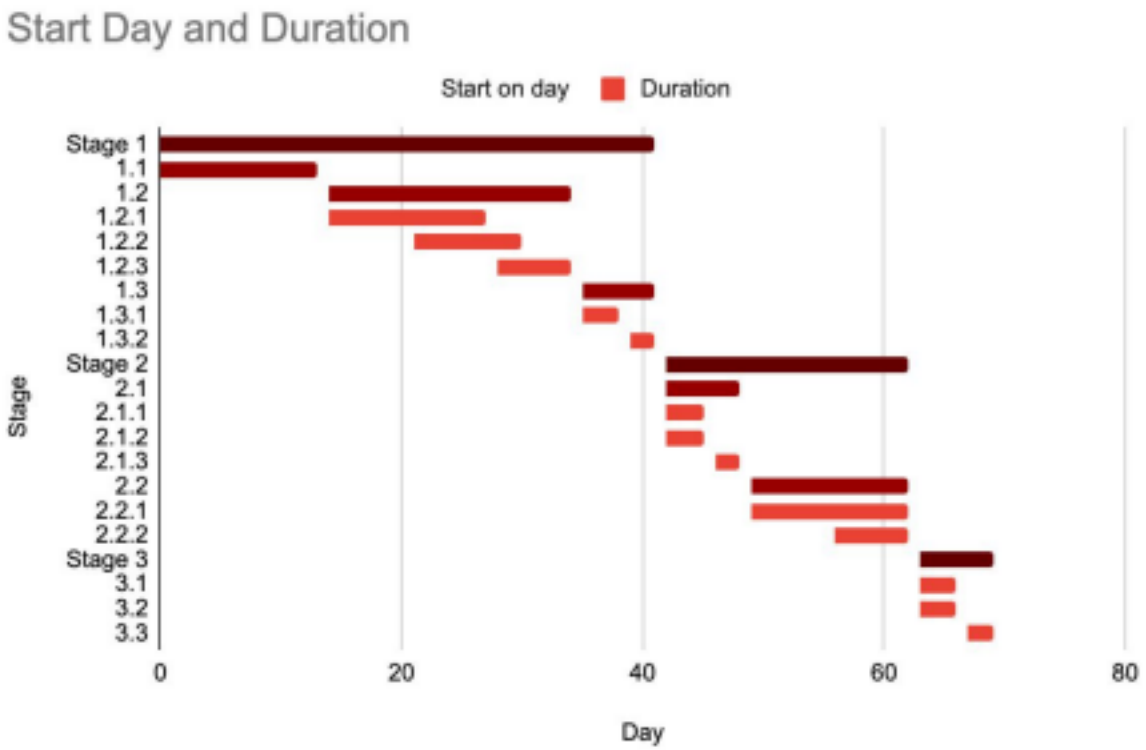
Figure 2: An example of a graph; the circles are vertices and the lines between them are edges

Utilizing graph theory in this way provides readers and scholars a new avenue for meaningful analysis of hypertext fiction. Authors put thought into the spatiality of

hypertext fiction when creating it (Rettberg, 2002), and so it is important to consider that
when analyzing the piece as a whole. While of course there is a discrepancy between the knowledge of the author being able to see the entire piece at once and readers encountering a page at a time, graph theory allows scholars to address questions this discrepancy creates, such as: how the sense of navigation can still give an important sense of spatiality, how observing how smaller fragments pieces of the work can produce their own meaning, and how that can accumulate over time also into a wider sense of the work. Exploring these questions among others will help me answer the fundamental question of if and how the structure of hypertext fiction is relevant to its literary meaning(s), as well as provide broader implications for digitally linked narratives, and navigating the web at large—concepts that are exceedingly relevant in our digital age.

3. **Research Plan - Methodologies and Timeline:** 450-700 words. Please define the main challenges of your project and what research methods you will use to address these challenges. Describe your research plan for the summer in chronological order - either use a week-by-week timeline or phases approach (i.e. week 1, week 2…or phase 1, phase 2…). Each week/phase should specify goals, action items, and methods. Please include in your plan information about exactly how/when you will check-in with your research mentor.

This is a wide-ranging project that requires knowledge of multiple fields, analysis of many different forms of data, from abstract mathematical models to rich literary works,



and establishing an entirely new direction for the meaning of graphs. The following plan is a response to these challenges, fitting unique methods such as close reading, annotation, and data analysis to each unique issue. I plan to check in every two weeks with my research mentor.

Figure 3: A Gantt chart of stage and duration of my research plan

Stage 1: Collection (Weeks 1-7)

1.1 Initial reading (Weeks 1-2)

Read *The Unknown* without any prior knowledge or analysis, to understand the text as it presents itself to the common reader.

Document

- what paths I seem to follow
- what threads seem to pop up more
- other interesting features I discover while reading

1.2 Literature review (Weeks 3-5)

1.2.1 Review selected literature about hypertext fiction, and modes of analysis within it.

Pay special attention to sections of their writing that discuss

- how spatiality can be represented in hypertext fiction
- narrative framing
- differences of hypertext on the Web versus other software

I also want to understand *how* various authors use their analyses of hypertext fiction to interpret meaning from the text, making note of

- the method and structure of analysis
- which component(s) of hypertext they focus
- what conclusions they arrive at

Readings include but are not limited to: Aarseth (1997), Bell (2010), and Landow (1992).

1.2.2 Review selected literature critiquing *The Unknown*

As with general hypertext fiction criticism, I will pay special attention to criticism about spatiality, narrative structure, and the software utilized. Readings include but are not limited to: Ciccoricco (2007), Rettberg, (2003), and Zenner (2005).

1.2.3 Review graph theory

I will review important parts of graph theory, including definitions, specific equations and formulas, and important theorems

1.3 Scrape data (Week 6)

1.3.1 Collect network data from *The Unknown*

To analyze the structure of *The Unknown*, I will list each page/node with its name, and each edge as the word that connects them. To do this, I will scrape the the code of the entire website either using open source code or creating my own.

1.3.2 Visualize data

For this, I can use either https://gephi.org/ or other open source code to produce a graph of my data.

Stage 2: Analysis (Weeks 7-9)

2.1 Define the spatiality of *The Unknown* as a network (Week 7)

2.1.1 Identify graphical shape

I will look at possible “shapes” that a graph of *The Unknown* can form by utilizing graph theory and comparing it with motifs and images from the text.

2.1.2 Identify subgraphs

I will identify concentrated groups of nodes in the graph of *The Unknown* that have the ability to form subgraphs, identify graph forms rich in symbolism (cyclic graphs, tree graphs, etc.), and then cross-reference the subgraphs with various forms

2.1.3 Connect micro-graphical structure with macro-graphical structure

Building off the first two parts of this stage, I will compare the overall graph and subgraphs within it, looking for larger examples of the subgraphs I identified, and smaller examples of any overlying shape if it exists.

2.2 Connect narrative(s) to spatiality (Weeks 8-9)

2.2.1 Reread *The Unknown* with graph structure in mind

I will choose sections including but not limited to the following reasons:

- they are integral parts of the main graph structure
- they form interesting subgraphs
- they are isolated pages that don’t add to much of any structure

I will then close read these sections, analyzing with respect to the graphs they form.

2.2.2 Compare the graph and subgraphs to content

Using conclusions I've drawn about the overall shape of a graph of *The Unknown* and symbolically rich subgraphs, I can now compare the content of various threads of the text with these shapes.

Stage 3: Interpretation (Week 10)

3.1 Determine what graph theory as a form of analysis can provide for hypertext fiction

This is both a check of hypothesis—if my research question is true, and a proof of hypothesis—why it is true. The proof in question will be summarizing and interpreting all the analysis that I have done up to this point.

3.2 Explore possibilities of a graphical analysis of hypertext fiction

I want to explore what conclusions I can draw about

- questions of navigation of hypertext fiction
- the connection between the structure of fragments of a graph and its over structure
- other threads I might think of during the research process.

3.3 Condense into a final product

Using the conclusions I have reached and the data visualizations I have created, I will produce a presentation for the August SURF conference, which will inform my subsequent senior thesis.

4. Your Qualifications and Project Affiliations: 150-250 words. What experiences have prepared you to carry out this research project, including coursework, previous research experiences, and other relevant skill building? If your project involves access to people and/or
institutions to support your work (i.e. interviewing subjects or partnering with institutions), please describe the affiliations, permissions and agreements you have already established as part of your plan.

Electronic literature is both a niche subject field and an extremely collaborative one, pulling in knowledge from computer science to media studies to comparative literature. As an English and mathematics double major, I bring an interdisciplinary approach to an interdisciplinary subject. I've also taken classes that give me the toolset for this research specifically—this includes classes in graph theory, network literature, data scraping, and literary theory. In fact, I am currently taking a class in the digital humanities under my research sponsor, Professor Clancy Wilmott, which will include in depth study in HTML coding, Python web scraping, and data visualization as well as cultural analysis.

I also have a depth of knowledge in the field of electronic literature itself, having worked with Electronic Literature Organization board member Professor Alex Saum-Pascual to

produce a DeCal explicating forms of electronic literature, including hypertext fiction. The experience of researching, planning, and teaching material to a group of my peers is an invaluable experience that expanded my own initiative to prepare me for pursuits such as this one. On top of this, I've established an academic relationship with Professor Saum-Pascual, who can connect me with the research and writings of her and her peers.

My knowledge of hypertext fiction specifically is a multifaceted one, with both analytical and experiential expertise. Discussing hypertext fiction in my DeCal has given me the opportunity to research the genre as well as practice literary analysis in it, while a different class gave me the opportunity to write my own hypertext fiction; entitled "Escaping Main Street," it was recently published online in *Agora Magazine*. With this experience, I can bring both an author and reader's perspective to hypertext fiction, which will provide nuanced views on facets of the form such as graphical shape, linkage, and the reading experience.

5. Citations and Core Texts: No longer than 1 page. This section should contain citations for any references you made in your proposal, and you are welcome to list any additional texts that you feel are central to your project.

Aarseth, Espen J. *Cybertext—Perspectives on Ergodic Literature*. Johns Hopkins University Press, 1997.

Bell, Alice. *The Possible Worlds of Hypertext Fiction*. Palgrave Macmillan, 2010.

Ciccoricco, David. "Fluid or Overflowing: *The Unknown* and **water always writes in *plural.*" *Reading Network Fiction*, University of Alabama Press, 2007, pp. 124-159.

Douglass, Jeremy. *Transverse Reading Gallery*, 2017, https://jeremydouglass.github.io/transverse-gallery/. Accessed 11 February 2021.

Gillespie, Rettberg, and Stratton. "Entering the Unknown…" *The Unknown*, 1998, https://unknownhypertext.com/. Accessed 11 February 2021.

Gillespie, Rettberg, and Stratton. "Online Press Kit." *The Unknown*, 1998, https://unknownhypertext.com/presskit/index.html. Accessed 11 February 2021.

Hayles, N. Katherine. "Electronic Literature: What is it?" *Electronic Literature Organization*, 2 January 2007, https://eliterature.org/pad/elp.html. Accessed 11 February 2021.

Johnson, Steven. "Why No One Clicked on the Great Hypertext Story." *WIRED*, 16 April 2013, https://www.wired.com/2013/04/hypertext/. Accessed 11 February 2021. Landow, George P. *Hypertext: The Convergence of Contemporary Critical Theory and Technology.* Johns Hopkins University Press, 1992.

Parker, Jeff. "A Poetics of the Link." *electronic book review*, 1 September 2001, https://electronicbookreview.com/essay/a-poetics-of-the-link/. Accessed 11 February 2021.

Rettberg, Scott. *Destination Unknown: Experiments in the Network Novel*. 2003. University of Cincinnati, PhD dissertation.

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Zenner, Roman. *Hypertextual Fiction on the Internet: A Structural and Narratological Analysis*. 2005. RWTH Aachen University, PhD dissertation.