Dante Visualization Project: Thesis Introduction
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> "Dante's poem is that panel whose edges enclose the universe. Yet I believe that if we were able to read it in innocence, (but that happiness that is barred to us), its universality would not be the first thing we would notice, and still less its grandiose sublimity. We would, I believe, notice other, less overwhelming and far more delightful characteristics much sooner, perhaps first of all … the varied and felicitous invention of precise traits."

> —Jorge Luis Borges

In his Prologue to "Nine Dantesque Essays," Borges fantasizes a magical work: a panel painting, an illustrated labyrinth, a microcosm of our universe whose surface encompasses all of history, past and future. Throughout the conically nested circles of hell, the evenly tapering cylindrical terraces of the Mountain of Purgatory, and the vast concentric spheres of the planetary heavens, Dante delineates a metaphysical space in which Borges can envision a place for every aspect of humanity. *The Divine Comedy* is this magical work, because Dante has authored this vast spatial realm with such precision, and Borges has the capacity to inhabit this space in ways our readers have never imagined. In my endeavor to build an interactive visualization of the topology of *The Divine Comedy,* I am following both Dante's and Borges' lead. By translating the architecture of poem into the graphical user interface, I hope to develop a new platform for expressive reading and inhabiting literary space.

The earliest readers and commentators recognized Dante's geometric precision and the deliberate clues by which he invites the reader to spatially reconstruct *The Divine Comedy*. Three hundred years after its writing, Galileo secured his first professorship by delivering a series of lectures on the mathematical integrity various models of Dante's hell. Two centuries later, John Ruskin built his aesthetic paradigms with Dante as the chief poetic model of stability, definiteness, luminosity. In our time, mathematicians have discerned prefigurations of calculus and hyperspheres within Dante's descriptions of paradise. Dante has written a world whose structural details are capacious enough to scale across seven centuries of cultural imaginations. Now that the digital screen is taking center stage on ours, it is worth investigating the GUI's capacity to visualize Dante's world.

Borges' "Nine Dantesque Essays" serves as the chief model for my approach to visualization. Reading into poetic and fictional space *is* an act visualization. The poem offers an open field that we may enter: we both project our desires upon the text and follow its lead to build an inhabitable space that both Dante's world and our own. Reading is a private and subjective act of mapping, transformation, and scaling within the playing field of consciousness. An expressive reader like Borges takes this process further. His essays elaborate his modes of inhabiting text in order to open new windows for contemporary (and future) readers. Though he concedes that the joy of reading the poem in innocence "is barred to us, his ultimate aim to renew our visions by refocusing our eyes from the scales of overwhelming universality and sublimity to those of the most specific, intimate, and human details.

At the heart of this project is the desire to to harness the geometric synergy *The Divine Comedy* and the GUI so that we as readers can inhabit Dante's poem with new eyes and collectively develop new forms of expressive reading. In the first section of this paper, I discuss Dante's topology: the textual blueprints of his universe, some of its historical interpretations, and the contemporary cultural implications of using his model as the basis for this project. In the second part, I discuss the act of reading as visualization. Drawing from Borges' essays and the critical work of Elaine Scarry, I discuss the traditional (pre-GUI) relationship between text and the spatial imagination. In third section, I investigate the concept of visualization as reading, that is, how visual interactive interface design may enhance, transform, renew, limit, and threaten the imaginative act of reading text. Within this context, I will go on to examine the various strategies of deploying this visualization effectively. In the end, the proof will be in the visualization and how it is used. The test will be whether the format and the builder have the capacity to achieve an interface that effectively extends Dante's metaphysical space into the computational realm in ways that opens up the poem to new and productive forms of reading.