Roman Larionov

Professor Brett Schwartz

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Augmented Reality Research: Distinguished Through Genre Use

Augmented reality (AR) is on the path to becoming the next big commodity technological

breakthrough. The act of altering your perception of the real world through interactive physical

displays, implanting furniture or other virtual obstacles on top of what can be been seen in the direct

vicinity has been an area of theorisation for the past several decades. There have been incremental

strides in the field since the early nineties, starting with coarse prototypes and leading to a peak in

popularity with the Nintendo Virtual Boy. This peak is what spelled doom for the community of

researchers performing work in this area at the time, but a recent resurgence has sprung up with the

advent of the MicroSoft Kinect and the subsequent research that has come out of it. In the past

several years, researchers in the AR field have increased in size from a relatively small handful to

many independently operated groups around the globe.

These communities of AR researchers exhibit the properties of an established discourse

community in their own right. The Interactive Systems and User Experiences Lab (ISUE) at the

University of Central Florida serves as a prime example of an - amongst other things - AR focused

research cluster. ISUE will be the reference discourse community for the analysis performed within

this annotated bibliography. It will serve as the testing agent onto which comparison is performed,

though referred to as a general discourse community amongst the wide range of similar discourse

communities located in surrogate academic or private sector institutions.

Since progress is iterative, collaboration between discourse communities of this type is

essential. Many groups have similar goals and use similar genres to achieve said goals within an

intertextuality frame of reference. An appropriately high level of abstraction through lexis use is found in genre sets meant for communication between research groups in AR. This is understandable, as, generally speaking, no facilitated learning conventions are needed in genres meant for communities pertaining to the same field. AR research groups, as a relatively premature set of discourse communities have a number of commonly agreed upon genre conventions that surely differ from those of established research groups in counterpart technologically heterologous fields. How both groups of researchers differ as conventional discourse communities is of peek interest. The ratio of niche to conventional genres that perform work within discourse communities is dynamic between these two groups and undoubtedly plays a distinct role in the actions that each group takes to achieve their respective goals. Measuring the similarities and differences between the genre and public goal choices and how they play to garner certain notoriety levels for AR researchers compared with other tech related researchers will be the focal point of this annotated bibliography.

LaViola, Joseph. Interactive Systems and User Experiences Lab Curator and Charles N. Millican
    Faculty Fellow . Interview by author, 30 October 2015, Orlando, Florida.

Joseph LaViola is the head of ISUE and is the main face for the discourse community's outward projection. He recited his experience in the field of human computer interaction, which eventually lead his research lab to focus its efforts on AR. He gave a brief description of how he got his start with research at Brown University with tablet and pen based interactions. He described how interactions with notable conferences occur for his PhD students research ventures as well as how he personally deals with meeting new clients and investors for the lab.

This interview gave insight into how a high ranking member of an augmented reality based research cluster interacts with outsiders to the community. This is informative and relevant mainly due to the fresh perspective of the person involved. A head member of the discourse community in

question will aid in identifying the common tropes that an AR community operates under. It helped in understanding how a member of an AR research group extends themselves and their group to those discourse communities that are necessary to be interacted with.

"Ordering Stuff & Future Projects." Message to the author. 3 Oct. 2015. E-mail.

This is an email sent from the senior ISUE curator to the lab's staff. It pertains the newly formed process of ordering essential materials relevant for work, as well as the new prioritization of current projects. The email is addressed to all members of the internal discourse community of ISUE and acts as an open forum for members to address the topic.

The email serves as a reminder that certain genre sets that are used within a discourse community, such as ISUE, can sometimes be quite trivial in nature. Besides the other presented forms of genre sets, e.g. research papers, emails fulfill the information transference requirement of this discourse community. Certain genre sets like these are ubiquitously useful and, as such, can be found within a wide variety of discourse communities. This email can hold as an example of the intersection of genre sets used by both AR based and non-AR based research clusters.

Prisacariu, Victor Adrian, et al. "A Framework for the Volumetric Integration of Depth Images."
     arXiv preprint arXiv:1410.0925 (2014).

A research paper, which is one of the primary genres of the scientific research community in general, which presents a compilation framework of modern day AR research. This paper describes the findings over the past several years of communal research in the AR space and acts as a checkpoint for research in the future. It uses lexis specific to the AR oriented community and assumes that a member of such a community is the the intended audience.

This particular genre can serve as a focal analysis point. It can be used to see how an internal member of an AR research discourse community would convey her findings to those in similar communities. This would be particularly useful in the understanding of how each research community decides on its particular genre choice when it comes to research papers. This text can be

dissected to understand the valued lexis usage and general flow. In the case of this research paper, along with many others, the general flow tends to be very terse in nature so as to allow for reciprocity and testability of the source material; attributes vital to this form of text both within AR based communities, as well as other tech related research groups.

Zhao, Zhendong, et al. "A Computationally Efficient Algorithm for Learning Topical Collocation
      Models."

      This is a research paper on natural language processing and was performed by several Google researchers, as well as some assisting lecturers from the Macquarie University, Australia and the University of Edinburgh, Scotland. It details the effective use of a novel graph optimized solution to a "bag-of-words" problems. It details an efficient algorithm for understanding context information between words grouped together, as opposed to considering nearby words in a text document unrelated to one another. This is displayed through a series of lexis that an AR researcher would be unfamiliar with..

      The relevance of such a research paper to this annotated bibliography comes into play when thinking about the intersection of common verbiage used between this research paper and the AR paper listed above. Besides the obvious lexis difference that is present between the two articles, an overall tonal shift can be noted. The direction of the text can be observed as distinct from that of AR based papers. References from this recently published paper are shown to go back to 1995; a much longer time gap than that of an AR paper in recent years. A direct comparison can be made against this genre example as a tool used by discourse communities outside of the AR realm.

Shehzad, Wasima. "Outlining Purposes, Stating The Nature Of The Present Research, And Listing Research Questions Or Hypotheses In Academic Papers." *Journal Of Technical Writing And Communication* 41.2 (2011): 139-160.*ERIC*. Web. 8 Nov. 2015.

This is a research paper written by Wasima Shehzad and submitted to the Journal of Technical Writing and Communication. It describes the methods by which computer science related research papers are written. It also presents in-depth observations of several different writing oddities found within these types of academic papers. The main topic of interest is how purposes and research questions are outlined within these journals. The results show that they tend to be terse, to the point, and scientifically written, so as to encourage replicability.

The relevance of this technical writing analysis journal is to identify the commonalities between AR and other tech research groups. Since both group's research papers follow the same general genre structure, as described by Shehzad's papers, they can both be fit into the template that is described by Shehzad. The comparison can then be made for both AR and other tech researchers for how far either of the two deviate from the standard model. Identifying whether there is any validity in the notion that AR based research papers are framed in an alternate context from the norm due to its relatively short lifespan is of particular interest.

Kraut, Robert, Carmen Egido, and Jolene Galegher. "Patterns of contact and communication in scientific research collaboration." *Proceedings of the 1988 ACM conference on Computer-supported cooperative work*. ACM, 1988.

This is another research paper by several communications researchers at Bell Research Labs in the 1980s. The paper discusses how communication habits between scientifically driven research centers can operate most efficiently, given the proper technological tools. It goes on to discuss the differing tool sets that, at the time, did not exist, but would offer the greatest impact in maintaining collaborative efforts. Their research emphasis was placed on proximity between groups, and how a varying amount of it might dictate the collaborative abilities of such groups. They also talk about

the need for a cheaper method of communicating over long distances, as at the time, the internet had

not expanded to the popularity that it has today.

This paper's usefulness is primarily in the communication differences between AR and other

tech related researcher groups. Since communication is work that is accomplished through genre

use, it will be interesting to analyze communication patterns as a function of cost, frequency, and

proximity. This function can be applied to the research objective as an auxiliary focal point.

Whether AR or other research groups communicate more effectively in any of the three described

areas will be an area of comparison.

Swales, John. "The Concept of Discourse Community." *Writing About Writing: A College Reader*.
    Ed. Elizabeth Wardle and Doug Downs. 2nd ed. Boston: Bedford/St. Martin's,
    2014. 217-28. Print.

This is an article that presents the definition for the discourse community by John Swales.

Swales' main purpose for describing such a term is mainly due to necessity. Prior to his inclusion to

the topic, texts being thought of as a rhetor targeting a specific audience with a myriad of differing

definitions for the contents in between. The idea of a community of people, who all use texts in a

unique fashion to achieve a set of goals was described here. Six overall characteristics of a

discourse community were shown including: a set of broadly agreed upon goals, mechanisms for

intercommunication, information and feedback transference, uses genres to help further their aims,

uses specific lexis, and maintains a certain ratio of membership between newbies and veterans.

This text will provide context for discourse community comparison. In order to compare two

discourse communities, the definition of a discourse community is required. To achieve a level of

scientific coherency, one must review the definition onto which certain assumptions are being

derived from. The relevance of the definition, onto the groups being compared, is shown through

the intimate relationship between the research statement and the concept of a discourse community.

Miller, Carolyn. "Genre as Social Action." *Quarterly Journal of Speech* 70 (1984): 151-67.
     JSTOR. Print.

In this article Carolyn Miller gives her definition of a genre. She opposes the opinion that genres should not be used to classify series of texts due to the notion that this classification might marginalize certain groups of text. She also proclaims that genres are thought of in too many frames of reference: forms of discourse, similar audiences, similar ways of thought, or in similar rhetorical situations. She defines genres as a classification of a text based not on the substance or form, but rather on the motive.

The relevance of Miller's argument occurs when comparing genre choice amongst the AR discourse community to that of other tech research discourse communities. If conceptualizing genres within each discourse is based on stylistic choices, rather than on a cause and effect relationships, then there would be no comparison, of substance, to be made. To view research papers and emails as consequences of a motive, or tools to achieve a predefined goal, would enable the analysis and subsequent investigative distinguishment between such motives. A set definition of genre, such as this, is crucial to completing the comparison detailed within the research statement.