

ICIDS 2018 Program Schedule and Session Info

Note on Session Durations:

- *Full paper presentations are 25 minutes in duration, including Q+A*
- *Short paper presentations are 20 minutes in duration, including Q+A*

WEDNESDAY

9:00 AM Registration and Coffee

9:30 AM - 10:45 AM Keynote 1

Research Into Interactive Digital Narrative: A Kaleidoscopic View

Janet H. Murray (link to page with photo and bio info: <http://homes.lmc.gatech.edu/~murray/>)

We are at a milestone moment in the development of the cultural form of Interactive Digital Narrative (IDN), and in the development of the study of IDN as a field of academic research and graduate education. We can date the beginning of the field to the late 1960s with the release of Joseph Weizenbaum's *Eliza* in 1966, and recognize the late 1990s as another turning point when 30 years of diverse development began to coalesce into a recognizable new media practice. For the past 20 years we have seen accelerated growth in theory and practice, but the discourse has been split among contributory fields. With the convening of IDN as the focus of study in its own right, we can address key questions, such as its distinct history, taxonomy, and aesthetics. We can also recognize more clearly our unique challenges in studying a field that is evolving rapidly, and from multiple intersecting genetic strains. We can also articulate and investigate the potential of IDN as an expressive framework for engaging with the most pressing themes of human culture of the 21st century, and as a cognitive scaffold for increasing our individual and collective understanding of complex systems.

10:45 AM - 11:00 AM Poster Lightning talks

11:00 AM - 11:30 AM Break

11:30 AM - 1:00 PM Paper Session 1: Impacts in Culture and Society

Spatial Participation Gap: towards a conceptual perspective on locative storytelling creation

Cláudia Silva

This article draws on a historical need to use locative media to understand information in order to offer a critical conceptual perspective on those who do not have the means to create locative storytelling as a result of what is called participation gap. By drawing on two case studies with ethnographical data, one in Austin, Texas, US, and another in Monmouth, Wales, UK, I discuss the use of mobile interfaces such as QR codes and the creation of location-based storytelling. Finally, the article introduces the notion of 'spatial participation gap', which is the unequal access to spaces and hybrid spaces.

Toward an Ethics of Interactive Storytelling at Dark Tourism Sites in Virtual Reality

Joshua Fisher, Sarah Schoemann

A number of VR storytelling experiences transport their users to representations of real world sites in which there has been death, pain, suffering, and tragedy. Much of the current scholarship regarding these VR experiences grapples with their technical success or failure. Less explored are the philosophical and ethical implications of transporting users to such dark sites. In an effort to fill in a knowledge gap, research from the field of dark tourism studies will be used to inform how VR stories might morally construct their representations. For over two decades, the field of dark tourism has grappled with the ethical planning, managing, and facilitating of tours at sites where atrocities, crimes, disaster, tragedy, and death have occurred. Dark tourism tour guides, interactive storytellers in their own right, have negotiated these dark narratives for centuries. This paper proposes that visits to dark tourism sites in VR should not just parallel current models of dark tourism but utilize the affordances of the medium to facilitate new opportunities for ethical compassion and understanding in the mediation of mortality. Foundational steps toward an ethics for these kinds of dark VR experiences is put forward for future discussion.

Interactive Digital Narratives (IDN) for Change: Educational Approaches and Challenges in a Project Focused on Migration

Teun Dubbelman, Christian Roth, Hartmut Koenitz

This paper shares the results of an interactive digital narrative (IDN) project, conducted at HKU University of the Arts Utrecht. We consider the potential of 'IDN for change', before we describe the project, the underlying design approach and the educational approaches. A particular focus of this paper is on pedagogical considerations. We describe the educational challenges we have encountered during the project as well as the pedagogical interventions we have implemented to counter these difficulties. On this basis, we discuss a more general perspective on the state and issues in IDN-focused pedagogy.

1:00 PM - 2:00 PM Lunch

2:00 PM - 3:30 PM Paper Session 2: Development and Analysis of Authoring Systems

Contemporary Issues in Interactive Storytelling Authoring Systems

Daniel Green, Charlie Hargood, Fred Charles

Authoring tools for interactive narrative abstract underlying data models to allow authors to write creative works. Understanding how our program and interface design decisions alter the User Experience design could lead to more robust authoring experiences. We contribute a taxonomy of authoring tools with identified program and User Experience observations with discussion into their impact on the authoring experience as well as reflection on two detailed experiments. We then present our own authoring tool, Novella, and discuss how it has implemented the lessons learned from the analysis and how it approaches solving the identified challenges.

How Do Writing Tools Shape Interactive Stories?

Sofia Kitromili, David Millard, James Jordan

Interactive Digital Storytelling is a diverse field, with a variety of different tools and platforms, many of them bespoke. Understanding how these tools effect the stories created using them would allow authors to better select tools for projects, and help developers understand the consequences of their design decisions. We present an initial exploration of this question, using a critical reflection method to analyze the process of adapting a story from StoryPlaces into both Twine and Inform 7. We report four significant differences that posed challenges for adaptation: support for rewinding and/or revisiting, the definition and description of locations, the way in which text is delivered to the reader, and how navigational cues are provided to help

readers progress the story. Our observations show that tools impact the stories created using them in ways that are not obvious when working with one platform alone.

A Framework for Classifying and Describing Authoring Tools for Interactive Digital Narrative

Yotam Shibolet, Noam Knoller, Hartmut Koenitz

Authoring tools are a crucial component in the practice and research of interactive digital narrative design, yet no recent meta-analysis or mapping of such tools exists that would make it possible to comparatively study their defining qualities and characteristics and their effects on the artefacts produced with them. As a first step towards this goal, we created an online resource in which we surveyed and classified over 300 tools. This paper lays out our proposed categorisation and description framework for IDN authoring tools. After exploring our definition of authoring tools and research methodology, we describe 9 categories and 38 descriptors for tool analysis and comparison. We conclude with a sample analysis of Twine.

StoryMINE: A System for Multiplayer Interactive Narrative Experiences

Callum Spawforth, David Millard

Multiplayer Interactive Narrative Experiences (MINEs) are interactive authored narratives in which multiple players experience distinct narratives (multiplayer differentiability) and their actions influence the storylines of both themselves and others (inter-player agency). Little research has been done to explore the possibilities of this type of narrative, and no complete model nor system exists. In this paper we introduce a model for MINEs based on sculptural hypertext and describe its implementation in a prototype system: StoryMINE. Then using a number of working narrative scenarios we demonstrate that the model and system supports a variety of inter-player interactions. It is our hope that this system provides a platform for the creation and reading of MINEs, and that this in turn creates opportunities for further research into this novel form of digital storytelling.

3:30 PM - 4:00 PM Coffee Break

4:00 PM - 5:30 PM Paper Session 3: Virtual Reality and Cultural Heritage

Measuring User Experience on Interactive Fiction in Cinematic Virtual Reality

María Cecilia Reyes

This paper proposes a methodology to measure User Experience (UX) dimensions on Interactive Fiction in Cinematic Virtual Reality (IFcVR), in order to evaluate the effectiveness of IFcVR as a narrative form and as a vehicle for different types of messages. The presented methodology merges Human Computer Interface (HCI) evaluation techniques with Interactive Digital Narrative (IDN) user dimensions, and gathers both qualitative and quantitative data by mixing different types of instruments. An experimental evaluation of an interactive VR fiction film functional prototype demonstrates the viability of the proposed methodology while gathered data shows a positive acceptance by the participants to IFcVR as an entertaining and immersive experience.

Director's Cut - Analysis of Aspects of Interactive Storytelling for VR Films

Colm O'Fearghail, Cagri Ozcinar, Sebastian Knorr, Aljosa Smolic

To explore methods that are currently used by professional virtual reality (VR) filmmakers to tell their stories and guide users, we analyze how end-users view 360° video in the presence of directional cues and evaluate if they are able to follow the actual story of narrative 360° films. In this context, we first collected data from five professional VR filmmakers. The data contains eight 360° videos, the directors cut, which is the intended viewing direction of the director, plot points and directional cues used for user guidance. Then, we performed a subjective experiment with 20 test subjects viewing the videos while their head orientation

was recorded. Finally, we present and discuss the experimental results and show, among others, that visual discomfort and disorientation on part of the viewer not only lessen the immersive quality of the films but also cause difficulties in the viewer gaining a full understanding of the narrative that the director wished them to view.

Applying Interactive Storytelling in Cultural Heritage - Opportunities, Challenges, and Lessons Learned

Akrivi Karifori, Manos Karvounis, Vassilis Kourtis, Maria Rossou, Sara Perry, Yannis Ioannidis

Digital storytelling in cultural heritage contexts has been recognized as a direction that cultural heritage institutions, including museums and historical sites, need to invest in to attract and engage their audiences. The term —interactive storytelling || is often used to characterize existing digital applications, whether these incorporate narrative structures or not. However, is —interactive storytelling || with its strict definition actually strongly present as an art form within the domain of cultural heritage, especially for on-site mobile experiences? In this work, we report on our experience and lessons learnt during our efforts to apply the genre of interactive storytelling in the heritage sector with the aim to more effectively support both authors and users of mobile interactive storytelling apps.

From Co-Curation to Co-Creation: Users as Collective Authors of Archive-Based Cultural Heritage Narratives

Fabian Mohr, Michael Schmitz, Soenke Zehle

To deepen the engagement of exhibition visitors with cultural heritage, we develop an interactive design approach to storytelling in which users can act both as co-curators and co-authors through a multitouch interface.

Evening Activities: Art Exhibition Opening

THURSDAY

9:00 AM Registration and Coffee

9:30 AM - 10:45 AM Keynote 2

A Tale of Two Dialogues: How Design Tools Shaped the Voice of Divinity: Original Sin 2

Sarah Baylus

How significantly does a creation tool impact the soul of a project? In 2014, Larian Studios published *Divinity: Original Sin* and began work on its sequel. The writers knew that the dialogues of this next game had to stand apart from - and outmatch - their predecessors, but the path forward wasn't immediately clear. Ultimately, the dialogue design tool itself - from user interface to functionality - was the key that unlocked the voice of the text of *Divinity: Original Sin 2*, from the types of characters possible to the writers' own perception of their relationship not only to characters, but to players themselves. In this keynote, Larian's lead writer Sarah Baylus reflects on the dialogue design tools of the studio's most recent titles and on their respective narrative power and focus.

10:45 AM - 11:00 AM Poster Lightning talks

11:00 AM - 11:30 AM Break

11:30 AM - 1:00 PM Paper Session 4: Practices in Games

Playing with Vision: Sight and Seeing as Narrative Mechanics in Survival Horror

Mads Haahr

A considerable number of survival horror titles use the modification of sight and seeing, in particular the disruption and enhancement of the same, as important elements in relation to story and game mechanics. Examples range from simple obscuration of the gameworld by mist and darkness to highly sophisticated approaches that directly break the fourth wall with visual effects that belong not to the game world but to the player's reality. Grouping the approaches under five headings—obscuration, distortion, mediation, perspectivity and disruption—this paper presents a comparative analysis of ten survival horror titles with a view to understanding how sight and seeing are used as story elements and narrative mechanics across the genre.

“The Link Out”: Towards a Theory of Epiphany in Digital Games

Andrea Di Pastena, Dennis Jansen, Brian de Lint, Amanda Moss

In this paper, we take up the subject of epiphany in digital games, inspired by Espen Aarseth's claim in *Cybertext* that epiphany serves as one half of a “pair of master tropes [that] constitutes the dynamic of hypertext discourse: the dialectic between searching and finding typical of games in general”. This article investigates the continuities and discontinuities between the literary epiphany and the hypertext epiphany, and subsequently theorizes the different types of epiphanies that occur in various digital games. We argue that epiphany in digital games is experienced by the player instead of the fictional protagonist, and that this experience can be brought about by ludic or narrative elements (making either a ‘ludic’ or a ‘narrative epiphany’), or by the collaboration of those elements (a ‘ludonarrative epiphany’). In addition, we distinguish between epiphany on a ‘local’, meaning small-scale and context-specific, and a ‘global’ scale, pertaining to the entirety of the game system. We conclude that an improved understanding of epiphany in digital games contributes to the maturation of digital games as a medium, since it allows both designers and scholars to better understand the medium-specific ways in which games can evoke certain feelings and emotions within their players.

Narrative-led Interaction Techniques

Felipe Breyer, Judith Kelner, Daniel Ferreira, José Paulo Teixeira, Paulo de Lima Filho, Pedro Henrique Mendonça, Givanio Melo

Despite the efforts of game companies to cut production costs, they spent more resources on developing items, animations, and special effects each year. One way to reuse game characters' animations is to change the interaction techniques that trigger such game actions. An interaction technique is a specific way to use an interaction device to perform an interaction task. Our research focused on eight interaction techniques for the digital button: Press, Rhythmic Press, Hold, Hold and Release, Opportunity Press, Quick Press, Time-Limited Hold, and Pump. To make these changes significant for the player, the game narrative must support them. We defined a model to guide game designers in making these modifications based on the interaction techniques' characteristics. This model offers two possibilities, increasing or decreasing the interaction techniques' complexity. As we did not find existing cases on the market nor in the literature, we developed a game and used the decreasing complexity approach as a proof of concept. In this way, we demonstrate how it is possible to change interaction techniques without adding new animations or items to the game.

We hope that game designers can use our model to change interaction techniques while keeping the game narrative coherent and refreshing the player's experience.

1:00 PM - 2:00 PM Lunch

2:00 PM - 3:30 PM Paper Session 5: Practices in Games and Virtual Reality

Perceived Agency as Meaningful Expression of Playable Character Personality Traits in Storygames

Liting Kway, Alex Mitchell

Academic discussion about agency has shifted towards agency as something the player perceives, rather than necessarily involving visible and lasting effects within a storygame. Existing work suggests players experience perceived agency even when no consequences result from their choices, due to various features and techniques used in storygames. This paper aims to understand the experience players have when engaging with choices and playable characters when playing storygames that produce a sense of perceived agency. We conducted retrospective protocol analysis and interviews with 15 players who played one of three games, *The Wolf Among Us*, *Oxenfree* and *Kentucky Route Zero*. Our findings suggest that perceived agency arises both from the player's ability and willingness to engage in meaningful expression of the playable character's personality within constraints, resulting in the creation of a unique playable character, and from the system's recognition of this expression of the playable character's personality through appropriate feedback.

Filling in the Gaps: "Shell" Playable Characters

Trena Lee, Alex Mitchell

In this paper we propose a new character type, the "shell" playable character, which differs from the standard playable character types of avatars or "rich" characters. These "shell" characters are neither complete "blank slates" for the players to project themselves onto, nor do they provide enough information to be considered "well-rounded" characters with complete personalities and backstories. Drawing on the concepts of *leerstellen* and ambiguity, we explore this new playable character type through comparative close readings of three games: *INSIDE*, *Emporium*, and *The Stanley Parable*. Our findings suggest that "shell" playable characters are characters that encourage players to develop their own understanding of the character, enabled through gaps and ambiguities that allow players the space to "fill" up the character with an interpretation of who the character could be, and to view the character as a separate entity rather than simply an extension of the player.

A Model for Describing Alternate Reality Games

Ryan Javanshir, David Millard, Beth Carroll

Alternate Reality Games (ARGs) are a form of transmedia storytelling that are difficult to describe and analyse due to their inherent ephemerality and use of multiple media channels. But critical analyses of ARGs and a deeper understanding of how they work are needed for both improvements in ARG design theory, and to aid in the preservation of ARG content and structure. This paper presents a way to describe and analyse ARGs, the ARG Descriptive Model (ADM), that combines together features from several existing approaches to create a more holistic description of an ARG. The ADM is then applied to two case studies to demonstrate how it can be used to model the media channels, potential navigation routes between these channels, and how these channels evolve over time. The paper shows that this approach can be applied to create a basis for a common methodology for ARG analyses.

Spatial Storytelling: Finding Interdisciplinary Immersion

Asim Hameed, Andrew Perkis

This paper is part of an ongoing transdisciplinary research into immersion. In specific, it focuses on Spatial Storytelling to examine the narrative technique in conjunction with Spatial Presence, a commonly accepted subtype of Presence. How our real-life occupation is a constant narrative making exercise and how storytelling is ingrained in our movement in space. It is argued here that immersion and presence models stand to benefit from spatial theory, particularly, the body of work surrounding spatial practices and narratives. Further, that the incorporation of spatial theory adds to the necessary versatility required in approaching immersion, which has been thus far dominated by positivist empiricism. Contributions of a theorized space are also found missing from interactive storytelling and videogames where subject/object interactivity is seen as mere actions performed inside a given space whereas the paper argues that space is learnt through such involvement.

3:30 PM - 4:00 PM Coffee Break

4:00 PM - 5:30 PM Paper Session 6: Theory and Analysis, Part 1

Re-Tellings: the Fourth Layer of Narrative as an Instrument for Critique

Mirjam Palosaari Eladhari

The fourth layer of narrative in Interactive Narrative Systems (INS), such as games, is the players' re-tellings of the stories they have experienced when playing. The occurrence of re-tellings can be considered as an indicator for a well designed INS and as an instrument of critique - the experiences of play are important and memorable to such a degree to the players that they find them worthy to tell others about. The notion of the fourth layer is added to the structural model of IN Systems having (1) a base architectural layer giving conditions for a (2) second layer of narrative design, while a (3) third layer is the narrative discourse - eg. the unique, session-specific played or traversed sequences of events. In relation to this, the Story Construction model is described.

Comparing Player Responses to Choice-Based Interactive Narratives

John Murray, Raquel Robinson, Michael Mateas, Noah Wardrip-Fruin

Interactive storytelling balances the desire to create dynamic, engaging experiences around characters and situations with the practical considerations of the cost of producing content. We describe a method for assessing player experience by analyzing player facial expressions following key content events in *The Wolf Among Us* by Telltale Games. Two metrics, engagement and valence, are extracted for six participants who play the first episode of the game. An analysis of the variance and distribution of responses relative to emotionally charged content events and choices suggests that content is designed around events that serve to anchor player emotions while providing the freedom to respond through emotionally-motivated choice selections and content elicitors.

Ludonarrative Hermeneutics: A Way Out and the Narrative Paradox

Christian Roth, Tom van Nuenen, Hartmut Koenitz

The practice of designing Interactive Digital Narratives [IDN] is often described as a challenge facing issues such as the "narrative paradox" and avoiding the unintentional creation of "ludonarrative dissonance". These terms are expressions of a perspective that takes narrative and interactivity as dichotomic ends of a design trajectory, mirroring an enduring discussion in game studies between positions often cast as ludologists and narratologists. The dichotomy of ludo versus narrative is, in itself, problematic and is often the source of

the very conflict it describes. In this paper, we investigate this issue through the example of the cooperative game *A Way Out*, in which two players team up to break out of prison. The game is designed with a narrative twist, involving the escalation and final resolution of the game's competitive motif in the final scene. To understand the user experiences of this reveal, and the concomitant consequences, we engage in a discursive analysis of "Let's Play" videos as a largely untapped resource for research. By analyzing the interactions and performances in these videos, we can more clearly understand player responses to unsatisfying IDN design. As a result we introduce the notion of a 'hermeneutic strip', extending Koenitz' SPP model to locate and describe the involved processes of narrative cognition in IDN work.

Evening Activities: Demo Exhibition Opening

FRIDAY

9:00 AM Registration and Coffee

9:30 AM - 10:45 AM Keynote 3

Digital Characters, Social Robots, and Interactive Experiences
Mei Si

Narrative is an important aspect of the human experience. With the rapid advancement of cognitive and computing technologies in recent years, virtual environments are becoming increasingly capable of providing a vivid, fictional world within which users can immerse and interact with digital characters either controlled by other users or by an AI system. In recent years, games that emphasize the social and narrative aspects of the player's experience have become increasingly popular. In addition to entertainment, digital characters and social robots have also been widely used for training, companion, and information providing purposes. In this talk, I will briefly review the applications of conversational agents and interactive narrative systems. I will then discuss the desiderata and challenges associated with creating conversational agents for different types of applications, and related techniques. In particular, I will address the unique affordances and challenges associated with creating conversational agents in robotic forms.

10:45 AM - 11:00 AM Poster Lightning talks

11:00 AM - 11:30 AM Break

11:30 AM - 1:00 PM Paper Session 7: Generative and Assistive Tools and Techniques

Automatic Detection of Conflicts in Complex Narrative Structures

Nicolas Szilas, Sergio Estupinan, Urs Richle

The central notion of conflict in drama is well-acknowledged but not properly formalized. Computational models of conflict tend to target one specific type of conflict and consequently lose the global point of view on the story. Using a model of dramatic structure, this article specifies a number of conflict types within a unified model and proposes an algorithm to automatically extract all conflicts within a narrative structure. The algorithm is then tested on a storyworld that shows as many as 31 coexisting conflicts. Finally, a cluster analysis on these conflicts is performed, showing that in the considered case, conflicts can be reduced to three main “conflict groups.”

Narrative Improvisation: Simulating Game Master Choices

Jonathan Strugnell, Marsha Berry, Fabio Zambetta, Stefan Greuter

Any computer game with a strong story has difficulty balancing the tension between narrative and agency. Strong narrative usually results in weak agency, and strong agency can weaken narrative structure. Narrative improvisation, adapting the story based on player reactions, is a difficult task for a game designer. Narrative improvisation, however, is regularly practised by the human game masters (GMs) of tabletop roleplaying games. As the first stage of building a game master agent (GMA), this paper examines the moment in which GMs decide if and how to alter their storyline due to player action. GMs were interviewed to discover their reactions when players make unexpected choices. Ten themes emerged from analysis of the interviews, we examined these themes to determine the thought processes that took place in the GMs’ minds, and we represented the processes as flow charts. These decision charts are a first step in the construction of a GMA that could assist in the development of more responsive interactive narrative in computer games.

Communicating Assertiveness in Robotic Storytellers

Raul Paradedo, Maria Jose Ferreira, Carlos Martinho, Ana Paiva

Social robots have been used to perform the role of storytellers in areas like education and pediatric rehabilitation. With the use of this technology, it is possible to setup different voices, simulate emotional states and even personalities for the same robot. However, finding the best setting that might define a trait for a storyteller robot, is not an easy task. What elements should be manipulated? Should it have a personality? If yes, which one? In this work, we try to answer these questions by studying several setups that will allow us to create an assertive social robot to act as a storyteller. We evaluate the assertiveness impression by manipulating three robot characteristics: posture, pitch, and speech rate. A within-subject study was conducted with 37 participants watching eight videos in which a social robot tells a short story. In each video, the robot presents a different setup, and the participant reports the level of assertiveness of that robot. We found a significant difference between the setups of pitch and posture as well as an acceptable assertive robot’s configuration using a combination of those three characteristics.

Automatic Plot Generation Framework for Scenario Creation

Yoji Kawano, Eichi Takaya, Kazuki Yamanobe, Satoshi Kurihara

Recently, the need for scenarios is increasing due to the increasing number of large-scale games, and the development of an automatic plot generation framework is needed to reduce a scenario writer’s workload. In previous studies, the main focus was to output the complete scenario from scratch. However, there is a problem in that the story does not have a degree of freedom and loses diversity, which is needed to avoid the breakdown of a story. In this study, we aim to generate stories with a high degree of freedom without any

breakdown. We regard a story as a hierarchical structure and use a structural theory method to gradually generate the scenario. We performed an evaluation experiment where we generated the plot, which is the first stage of scenario generation, automatically using the thirteen-phase theory, which is a type of scenario structure. The results of the evaluation demonstrate that it was possible to automatically generate something close to a plot created by a scenario writer.

1:00 PM - 2:00 PM Lunch

2:00 PM - 3:30 PM Paper Session 8: Practices in Theater and Performance

Partners: Human and Nonhuman Performers and Interactive Narrative in Postdigital Theater

Rebecca Rouse

Media performance scholarship has largely not engaged with innovative work in the incorporation of technology in mainstream theater, pursuing instead a nearly exclusive focus on non-narrative works of media performance such as electronic music, dance, and installation art. This article provides a corrective to this absence, and highlights creative work from the 19th century onward with technologies in service of interactive storytelling in theater. Cornerstone concepts in the media performance field are examined, as well as possible anxieties behind the relative exclusion of narrative theater from the field. The concept of partnership is put forth as a way of understanding human and non-human performer relationships in postdigital culture, and a call for collaboration across disciplines including interactive narrative, games, electronic literature, artificial intelligence, and architecture is discussed. The practice-theory divide is bridged with a closing discussion of the author's work in creative practice in the field.

'What country, friends, is this?' Using Immersive Theatre Practice to Inform the Design of Audience Experience in Estate 360°

Scott Palmer

This paper focuses on issues arising from the making of an experimental interactive 360-degree video that emerged from a relational 'immersive' site-specific theatre project for a public audience that was staged in historic grounds in South Florida, USA in April 2017. This work was undertaken with academics from University of Miami, Kim Grinfeder and Stephen Di Benedetto. The specific nature of the performance event, the filming of aspects of this experience and the post-production processes each raise significant questions relating to the development of methods of 'interactive' digital storytelling for 'immersive' audience experience. The role of theatre practice and performance design in developing these mediated experiences seems to be an important element that has largely been ignored in thinking about how digital immersive experiences might be created. The video *Estate 360°* was first published online in January 2018 and is freely available to download: <https://interactive.miami.edu/estate/>

From Literary Novel to Radio Drama to VR Project: The Thousand Autumns of Jacob de Zoet

Mirjam Vosmeer, Alyea Sandovar, Ben Schouten

For this study we investigated if and how the merging of VR with radio drama can provide general insights into storytelling for VR. In order to present the student project *The thousand autumns of Jacob de Zoet* as a case study, we discuss environmental storytelling, and storytelling in relation to VR and radioplay. We conclude that the traditional *lean back* medium that is radio drama may benefit from the *lean in* quality of VR and we discuss a number of strong concepts that can be explored in order to gain further knowledge about storytelling for VR.

fanSHEN's Looking for Love: A Case Study in How Theatrical and Performative Practices Inform Interactive Digital Narratives

Dan Barnard

This paper explores how theatrical and performative practices inform interactive digital narratives. It does this through a case study of *Looking for Love*, a new piece by fanSHEN. The creative process used to create *Looking for Love* is analysed in terms of its roots in theatrical processes, particularly in terms of characterization, the relationship between structure and improvisation, dramatic arc and the role of the spectator.

3:30 PM - 4:00 PM Coffee Break

4:00 PM - 5:30 PM Paper Session 9: Theory and Analysis, Part 2

The Myth of 'Universal' Narrative Models: Expanding the Design Space of Narrative Structures for IDN

Hartmut Koenitz, Andrea Di Pastena, Dennis Jansen, Brian de Lint, Amanda Moss

In narrative game design and related practices, the role and function of narrative models is described as predominantly pragmatic. However, we see that many interactive digital narratives (IDN) including narrative video games derive their story structures from the same formulas connected to Joseph Campbell and Aristotle, adhering to the trajectory of the Hero's Journey and the dramatic arc. We engage with scholarly criticism exposing the supposed ubiquity of these structures and agree that the question of narrative models in interactive digital media requires both further exploration and intervention. We follow up on some proposed solutions by looking at non-Western narrative traditions to expand the corpus of narrative structures available to game designers and other narrative developers. With this paper we raise awareness of alternative structures and simultaneously introduce implementable narrative structures with the aim to expand the design space and range of analytical models for IDN.

Predictability and Plausibility in Interactive Narrative Constructs: A Case for an ERP Study

Bjørn Anker Gjøøl, Niels Valentin Jørgensen, Mathias Ramsø Thomsen, Luis Emilio Bruni

It is a common assumption that subjects unconsciously construct storyworlds in their minds when experiencing a narrative. In this article we suggest that this construction includes imagined rules and constraints that if violated may affect the subjects' suspension of disbelief. In this direction, we examine whether the cognitive processing of people experiencing interactive narratives varies based on whether the outcomes of their actions are perceived to be predictable and plausible, according to the narrative context. In order to explore this hypothesis, we devised an event-related-potential experiment and created a video game featuring a number of player-instigated narrative events within three different categories: a) predictable-plausible, b) unpredictable-plausible, and c) unpredictable-implausible. Based on the analysis of the N400 and P600 ERP components, our results show that there is a significant detectable difference between the three categories. Additionally, the results strongly indicate that experiencers of interactive narratives do indeed create storyworlds' rules and constraints in their minds, and that the imagined rules of these worlds can be felt to be broken by implausible events.

Meta-Communication Between Designers and Players of Interactive Digital Narratives

Colette Daiute, Robert Duncan, Feder Marchenko

This study addresses a typically silent dimension of Interactive Digital Narrative (IDN) theory and practice – meta-communication between designer and player. Meta-communication involves directly sharing thoughts and feelings the designer and player have during the development

process. We refer to this interaction as “meta-communication” to distinguish it from comments about behavior, such as mentioning options chosen and evaluations of the IDN product. To address foundational questions about meta-communication in the IDN process, we conducted a research workshop with undergraduate novice IDN designers. Participants worked through a series of *Twine* IDN design-play sessions and made their meta-communication explicit using a think-aloud protocol. Transcriptions of the think-aloud sessions and notes made by designers and players during the IDN design process were analyzed for expressive functions, such as stating confusion or emotion. Analyses of the IDN designs identified structural features such as nodes and connections. Results of quantitative and qualitative analyses revealed that the frequency and type of meta-communications relate to the complexity of the final product (connection density). This study contributes a practice-based research approach accounting for inter-subjective dimensions of the IDN experience, thereby adding measurable psychological constructs to IDN theory.

Towards Generating Stylistic Dialogues for Narratives using Data-Driven Approaches

Weilai Xu, Charlie Hargood, Wen Tang, Fred Charles

Recently, there has been a renewed interest in generating dialogues for narratives. Within narrative dialogues, their structure and content are essential, though style holds an important role as a mean to express narrative dialogue through telling stories. Most existing approaches of narrative dialogue generation tend to leverage hand-crafted rules and linguistic-level styles, which lead to limitations in their expressivity and issues with scalability. We aim to investigate the potential of generating more stylistic dialogues within the context of narratives. To reach this, we propose a new approach and demonstrate its feasibility through the support of deep learning. We also describe this approach using examples, where story-level features are analysed and modelled based on a classification of characters and genres.

Evening Activities - TBA

SATURDAY

9:00 AM Registration and Coffee

9:30 AM - 11:00 AM Paper Session 10: Future of the Discipline

Science Considered Helpful

R. Michael Young

As the interactive narrative community continues to mature, discussions are beginning in which we debate the relative merits of differing methodologies, discuss priorities around classes of problems and look at epistemological questions that arise from what we perceive as limitations of our work. Horswill's *Science Considered Harmful* initiated a conversation around the role of science in the advancement of knowledge in our field, putting forward the idea that a scientific mindset restricts our ability to progress. In this paper, I respond, arguing that science, and more generally scientific rigor and the kind of results that it produces, are well served by a discourse that makes productive distinctions between such things as science and not science. In particular, I argue that such a thing as a science of narrative exists, that scientific work is an important way to advance our knowledge of computational models of narrative and that scholarly practice

around interactive narrative research does not need to be viewed as only scientific or as only artistic/aesthetic.

Thoughts on a Discipline for the Study of Interactive Digital Narratives

Hartmut Koenitz

This paper presents arguments for the creation of an academic discipline concerned with the analysis and design of interactive digital narratives, akin to game studies. I analyse the status quo as the result of foundational aspects and the effects of the historical development of games studies before identifying a range of problems that have their root cause in the lack of an academic home and the support structures that come with it. In particular, the lack of a legitimizing framework translates into difficulties with academic recognition, reduced opportunities for grants and scholarships, scarcity of academic positions, and discontinuity of research which amounts to academic memory loss. In order to understand where the field stands, I apply three perspectives on requirements for an academic discipline from outside the field and come to the conclusion that while much progress has been made, there are areas in need of further attention, in particular when it comes to formal programs of study. Conversely, I identify the development of degree programs as an area needing particular attention in order to create an academic discipline.

A Villain's Guide to Social Media and Interactive Digital Storytelling

Mark Bernstein, Clare Hooper

If we have not yet achieved planetary super-villainy on the desktop, it may be feasible to fit it into a suburban office suite. The familiar perils of fiction and deceit can now be augmented by mass customization, allowing power-ful malefactors to shape perceived reality to suit their preferences. Social media permit the modern villain to deploy traditional cruelties to great and surprising effect. Interactive digital storytelling lets us exploit weakness and illness for profit and help us normalize wickedness. Because the impact of villainous techniques is radically asymmetric, our fetid plots are difficult and costly to foil.

11:00 AM - 11:30 AM Break

**11:30 AM - 1:00 PM ARDIN (Association for Research in Digital Interactive Narrative)
General Assembly Meeting**

1:00 PM - 2:00 PM Lunch

2:00 PM - 3:30 PM Workshop Session / Doctoral Consortium

3:30 PM - 4:00 PM Coffee Break

4:00 PM - 5:30 PM Workshop Session / Doctoral Consortium

Evening Activities: Conference Banquet, Awards, and Closing Remarks