EXPOSÉ PROPOSAL

Procedural Quest and Dialogue Generation

in Role – Playing Games

Research Question:

Is the quality of procedural generated quests and dialogues as good as scripted ones?

Aims and Objectives:

- To show that procedural generated dialogues are able to feel as normal as scripted ones.
- To investigate the advantage of procedural generated dialogues and quests in time and cost.
- To examine the opportunity of nearly endless achievable goals, challenges and stories given by those. Without the limitation of time the Quest Designer had to implement them.
- To analyse the improvement of replayability through procedural generated content.

Abstract

Procedural generated Content is getting more and more popular in the game industry. At the moment procedural generation is primarily used to create unique game environments. The next step in this development trend is to generate procedural quests, dialogues and even backstories, to fill an automatically created world. This paper describes what procedural generated quests and dialogues are, are short overview of methods how to create them and if they are as good as normal scripted content.

Keywords: Procedural generation, quest generation, dynamic dialogues, game development, role-playing games.

Introduction

In today's game industry the usage and importance of procedural generated game content increases steadily. Besides it creates unique content for the players it is also a huge competitive advantage against other game studios in cost and time.

Currently procedural generation is mostly used for environment creation, and very little for quest and dialogue generation.

Especially in Role-Playing-Games (RPG) procedural generated quests and dialogues would be a massive advantage to generate side quests. For the main story of a RPG is a scripted storyline preferable to maintain excitement and dramatic.

Although there are already methods to use them, the fear of unnatural sounding dialogues is prevailing.

This thesis should show that generated quests and dialogues are as good as scripted ones and that they are useable in the game industry.

First of all it will approach topics like how dialogues and quests are constructed, which patterns they use and with which programs are used to generate such patterns.

Furthermore this thesis will point out a few methods to use and implement procedural quests and dialogues. Investigate the advantages and disadvantages of those. At last it will investigate methods how to measure the quality of quests and dialogues. How dialogues have to be constructed to sound natural and which elements are necessary to build up a good quest.

Primary References

- Kacmarcik, Gary, ed. 2005. Question-Answering in Role-Playing Games. Question Answering in Restricted Domain: Papers from the AAAI Workshop. Menlo Park, California: AAAI Press. http://aaaipress.org/Papers/Workshops/2005/WS-05-10/WS05-10-009.pdf.
- 2) Ashmore, Calvin, and Michael Nitsche, eds. 2007. *The Quest in a Generated World*. 4th ed. DiGRA Proceedings of the 2007 DiGRA International Conference: Situated Play: The University of Tokyo. http://www.digra.org/wp-content/uploads/digital-library/07311.20228.pdf.
- 3) Doran, Jonathan, and Ian Parberry. 2010. "Towards Procedural Quest Generation: A Structural Analysis of RPG Quests." Technical Report LARC-2010-02, Laboratory for Recreational Computing, University of North Texas. https://larc.unt.edu/techreports/LARC-2010-02.pdf.
- 4) Grey, John, and Joanna Bryson, eds. 2011. *Procedural Quests: A Focus for Agent Interaction in Role-Playing-Games.* University of York, UK. https://www.cs.bath.ac.uk/~jjb/ftp/GreyAISB11.pdf.
- 5) Kerr, Christopher, and Duane Szafron, eds. 2009. *Supporting Dialogue Generation for Story-Based Games*. Menlo Park, California: AAAI Press. http://www.aaai.org/ocs/index.php/AIIDE/AIIDE09/paper/viewFile/783/1059.
- 6) Young-Seol Lee, and Sung-Bae Cho. 2011. "Context-Aware Petri Net for Dynamic Procedural Content Generation in Role-Playing Game." *Computational Intelligence Magazine, IEEE* 6 (2): 16–25. doi:10.1109/MCI.2011.940618.
- 7) Smith, Adam M., and Michael Mateas. 2011. "Answer set programming for procedural content generation: A design space approach." *Computational Intelligence and AI in Games, IEEE Transactions on* 3 (3): 187–200.
- 8) Lee, Young-Seol, and Sung-Bae Cho. 2012. "Dynamic quest plot generation using Petri net planning." In *Proceedings of the Workshop at SIGGRAPH Asia*, 47–52.
- 9) Nitsche, Michael, Calvin Ashmore, Will Hankinson, Rob Fitzpatrick, John Kelly, and Kurt Margenau. 2006. "Designing procedural game spaces: A case study." *Proceedings of FuturePlay* 2006.

Secondary References

- 1) Szafron, Duane, and J. Siegel. 2009. "Dialogue Patterns A Visual Language For Dynamic Dialogue." *Journal of Visual Languages and Computing* (Volume 20 Issue 3): 196–220.
- 2) Trenton, Marcus, Duane Szafron, John Friesen, and Curtis Onuczko, eds. 2010. *Quest Patterns for Story-Based Computer Games*. Menlo Park, California: AAAI Press. https://webdocs.cs.ualberta.ca/~duane/publications/pdf/2010aiideMT.pdf.
- 3) Togelius, J., G. N. Yannakakis, K. O. Stanley, and C. Browne. 2011. "Search-Based Procedural Content Generation: A Taxonomy and Survey." *Computational Intelligence and AI in Games, IEEE Transactions on* 3 (3): 172–86. doi:10.1109/TCIAIG.2011.2148116.
- 4) García, Rubén, Pablo García Sánchez, Antonio Mora, and J. Merelo. "My Life as a Sim: Evolving Unique and Engaging Life Stories Using Virtual Worlds." In *Artificial Life 14:*International Conference on the Synthesis and Simulation of Living Systems, 580–87.
- 5) Doran, Jonathon, and Ian Parberry. 2011. "A prototype quest generator based on a structural analysis of quests from four MMORPGs." In *Proceedings of the 2nd International Workshop on Procedural Content Generation in Games*, 1.

Tertiary References

- 1) Larsson, Staffan, and David R. Traum. 2000. "Information state and dialogue management in the TRINDI dialogue move engine toolkit." *Natural language engineering* 6 (3&4): 323–40.
- 2) Lucas, Simon M., Michael Mateas, Mike Preuss, Pieter Spronck, Julian Togelius, and Marc Herbstritt. 2013. "Artificial and Computational Intelligence in Games." A Follow-up to Dagstuhl Seminar 12191. http://www.dagstuhl.de/dagpub/978-3-939897-62-0.
- 3) Doran, Jonathan, and Ian Parberry. 2015. "A Server-Side Framework for the Execution of Procedurally Generated Quests in an MMORPG." Technical Report, Laboratory for Recreational Computing, University of North Texas. https://larc.unt.edu/techreports/LARC-2015-01.pdf.
- 4) Sergio Poo Hernandez, Vadim Bulitko, and Marcia Spetch, eds. 2015. *Keeping the Player on an Emotional Trajectory in Interactive Storytelling*. Palo Alto, California: AAAI Press. Accessed November 09, 2015. http://www.aaai.org/ocs/index.php/AIIDE/AIIDE15/paper/view/11535/11356.

- 5) Riedl, Mark O., and Andrew Stern. 2006. "Believable agents and intelligent story adaptation for interactive storytelling." In *Technologies for Interactive Digital Storytelling and Entertainment*, 1–12: Springer.
- 6) Smith, Gillian, Ryan Anderson, Brian Kopleck, Zach Lindblad, Lauren Scott, Adam Wardell, Jim Whitehead, and Michael Mateas. 2011. "Situating quests: Design patterns for quest and level design in role-playing games." In *Interactive Storytelling*, 326–29: Springer.