

Yun-Gyung Cheong

CONTACT INFORMATION	Computer Games and Interaction Design (CGID) IT University of Copenhagen Rued Langgards Vej 7, 2300 Copenhagen S, Denmark	<i>Voice:</i> (+45) 7218 5038 <i>Fax:</i> (+45) 7218 5001 <i>E-mail:</i> yugc@itu.dk <i>Webpage:</i> www.itu.dk/people/yugc
RESEARCH INTERESTS	Artificial Intelligence, Game AI, Procedural Content Generation, Interactive Storytelling, Narrative Generation, User Modeling, Intelligent User Interfaces, Computational Intelligence, AI Planning, Natural Language Processing, Game Data Analysis, Serious Games	
EDUCATION	North Carolina State University , Raleigh, North Carolina, USA Doctor of Philosophy, August 2007 <ul style="list-style-type: none">• Dissertation Title: A Computational Model of Narrative Generation for Suspense• Advisor: R. Michael Young, Ph.D. Department of Computer Science, NC State University Sungkyunkwan University , Seoul, South Korea M.S., Computer Science, February 1998 <ul style="list-style-type: none">• Thesis Title: A Study on Tracking and Predicting the Face Trajectories Using a Neural Network• Advisor: Moon-Hyun Kim, Ph.D. B.S., Information Engineering, February 1996	
PROFESSIONAL EMPLOYMENT HISTORY	IT University of Copenhagen , Denmark <i>Post-doctoral fellow (advisor: Georgios N. Yannakakis)</i> October, 2010 - present Managed the EU FP7 ICT project SIREN (Social games for conflict resolution based on natural interaction). Researched adaptation approaches and user modeling in serious games for children. Collaborated with partners across Europe and USA. Taught classes and advised graduate students. Wrote research papers, project reports, and project proposals. Samsung Advanced Institute of Technology , South Korea <i>R&D Staff</i> March, 2008 - August, 2010 Led and administered AI research projects for intelligent user interfaces and story generation. Wrote patents, research papers, and proposals. LG Electronics , South Korea <i>Programmer</i> May, 1998 - March, 2001 Implemented mobile communication protocol. Developed real-time database interfaces for operation and maintenance systems using X Motif, PHP, and Java script.	
HONORS AND AWARDS	Recipient, Google Scholarship to attend the AAAI Doctoral Consortium 2006. Awarded NCSU RA/TA Scholarship, Raleigh, NC, 2001-2006. Awarded Grand Prize for developing new enterprise, LG Electronics, South Korea, 1999. Awarded LG Industrial-educational cooperation program scholarship, South Korea, 1997. Awarded Graduate Scholarship, Sungkyunkwan University, 1996-1997. Awarded SKKU RA/TA Scholarship, Sungkyunkwan University, 1996-1997.	

JOURNAL PUBLICATIONS

1. Procedural Content Generation for Games. Cheong, Y.-G. and Bae, B.-C. Korea Information Science Society Review. Vol. 31 (no. 7), July, 2013 (written in Korean).

US PATENTS

2. Apparatus and Method for Providing Digital Content. Yeo-Jin Kim, Yun-Gyung Cheong. U.S. Patent number: 8,386,933, Registered on February 26, 2013.
3. Data Processing Apparatus and Method for Constructing Interactive Contents and Recording Media. Yun-Gyung Cheong. U.S. Patent number: 8,266,093, Registered on September 11, 2012.

CONFERENCE PUBLICATIONS

4. Modeling Foreshadowing in Narrative Comprehension for Sentimental Readers. Bae, B.-C., Cheong, Y.-G., and Vella, D. In the Proceedings of the *International Conference on Interactive Digital Storytelling (ICIDS)*, Istanbul, Turkey, November, 2013 (to appear).
5. Player Perspectives to Unexplained Agency-Related Incoherence. Pirtola, M. I. A., Cheong, Y.-G., Nelson, M. J. In the Proceedings of the *International Conference on Interactive Digital Storytelling (ICIDS)*, Istanbul, Turkey, November, 2013 (to appear).
6. Unexplained agency-related incoherence in anachronic and linear games. Pirtola, M. I. A., Cheong, Y.-G., Nelson, M. J. *Narrative Minds and Virtual Worlds*. Tampere, Finland, 21-22, May, 2013. (presentation)
7. Between Intention and Improvisation: Limits of Gameplay Metrics Analysis and Phenomenological Debugging. Canossa, A. and Cheong, Y.-G. In the Proceedings of the *Digital Games Research Association (DiGRA)*. Amsterdam, the Netherlands, September, 2011.
8. Automated Story Generation with Multiple Internal Focalization. Bae, B.-C., Cheong, Y.-G., Young, R. M. In the Proceedings of *IEEE CIG (Computational Intelligence in Games)*, Seoul, South Korea, August 31th - September 3rd, 2011.
9. A Computational Approach Towards Conflict Resolution for Serious Games. Cheong, Y.-G., Khaled, R., Grappiolo C., Campos J., Martinho C., Ingram GPD, Paiva A., Yannakakis G. N. In the Proceedings of *FDG (Foundations of Digital Games)*, Bordeaux, France, June 28th - July 1st, 2011.
10. Toward a Computational Model of Focalization in Narrative. Bae, B.-C., Cheong, Y.-G., Young, R. M. In the Proceedings of *FDG (Foundations of Digital Games)*. Bordeaux, France, June 28th - July 1st, 2011. (Poster)
11. An Ontology-based Reasoning Approach Towards Energy-Aware Smart Homes. Cheong, Y.-G., Kim, Y.-J., Yoo, S.-Y., Lee, H., Lee, S., Chae, S.-C., Choi, H.-J. In the Proceedings of *IEEE Consumer Communications and Networking Conference (CCNC)*. Las Vegas, Nevada, USA, January 9-12, 2011.
12. An Interactive-Content Technique Based Approach to Generating Personalized Advertisement for Privacy Protection. Min, Wook-Hee and Cheong, Yun-Gyung. In the Proceedings of the *HCI International Conference (HCII)*, San Diego, California, USA, 19-24 July 2009.
13. Narrative Generation for Suspense: Modeling and Evaluation. Cheong, Yun-Gyung and Young, R. M., In *LNCS: 1st Joint International Conference on Interactive Digital Storytelling (ICIDS)*, Erfurt, Germany, November 26-29, 2008, vol. 5334, U. Spierling and N. Szilas (Eds.), pp. 144-155, Springer-Verlag, Berlin Heidelberg, 2008.
14. PRISM: A Framework for Authoring Interactive Narratives. Cheong, Y.-G., Kim, Y.-J., Min, W.-H., Shim, E.-S., and Kim, J.-Y., In *LNCS: 1st Joint International Conference on Interactive Digital Storytelling (ICIDS)*, Erfurt, Germany, November

26-29, 2008, vol. 5334, U. Spierling and N. Szilas (Eds.), pp. 297-308, Springer-Verlag, Berlin Heidelberg, 2008 .

15. Automatically Generating Summary Visualizations from Game Logs. Cheong, Y.-G., Jhala, A., Bae, B-C, and Young, R. M., In Proceedings of the *the Second Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)* , Stanford, CA, USA, October 22-24, 2008. (Poster)
16. A Framework for Summarizing Game Experiences as Narratives. Cheong, Yun-Gyung and Young, R. Michael, In the Proceedings of the *Second Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)* , Marina del Rey, CA, USA, June 20-23, 2006. (Poster)
17. Prediction of Eye Trajectories Based on the ART Neural Network. Ra, J.-H., Cheong, Y.-G., Kim, M.-H. In the Proceedings of the *International Conference on Artificial Intelligence (IC-AI)* , Las Vegas, NV, June 2000.

STRONGLY REFERRED WORKSHOP PUBLICATIONS

18. Towards Validating Game Scenarios for Teaching Conflict Resolution. Yun-Gyung Cheong, Corrado Grappiolo, Christoffer Holmgren, Florian Berger, Rilla Khaled and Georgios N. Yannakakis. *Games for Learning workshop at FDG*, Chania, Greece, May, 2013.
19. A Lightweight Story-Comprehension Approach to Game Dialogue. Robert P. van Leeuwen, Yun-Gyung Cheong and Mark J. Nelson. In the Proceedings of the *1st Workshop on Games and NLP (GAMNLP-12)*, *JapTAL (the 8th International Conference on Natural Language Processing)*, Kanazawa, Japan, October 23, 2012.
20. Generating Narrative Action Schemas for Suspense. Giannatos S., Cheong, Y.-G., Nelson, M.J., and Yannakakis, G. In the Proceedings of the *5th Workshop on Intelligent Narrative Technologies (INT5)*, *AIIDE*. AAAI Press, 2012.
21. Modelling Global Pattern Formations for Collaborative Learning Environments. Grappiolo, C., Cheong, Y.-G. Khaled, R., Yannakakis, G. N. In the Proceedings of the *IEEE international conference on Advanced Learning Technologies (ICALT) 2012 Doctoral Consortium*. Rome, July 4-6, 2012.
22. Suggesting New Plot Elements for an Interactive Story. Giannatos, S., Nelson, M., Cheong, Y.-G., and Yannakakis, G. N. In the Proceedings of the *4th Workshop on Intelligent Narrative Technologies (INT4)*, *AIIDE*. AAAI Press, 2011.
23. Towards Player Adaptivity in a Serious Game for Conflict Resolution. Grappiolo, C., Cheong, Y.-G., Togelius, J., Khaled, R., Yannakakis, G. N. In the Proceedings of the *VS -Games 2011 Natural Interaction and Player Satisfaction in Games Workshop*. Athens, Greece. May 4-6, 2011.
24. Planning-Integrated Story Graph for Interactive Narratives. Cheong, Y.-G., Min, W.-H., Shim, E.-S., Kim, Y.-J., and Kim, J.-Y. In the Proceedings of the *ACM Multimedia 2008 SRMC (Story Representation Mechanism Context) Workshop*. Vancouver, BC, Canada, October 27-31, 2008.
25. A Computational Model of Narrative Generation for Suspense. Cheong, Y.-G., and Young, R. M., In the Proceedings of the *AAAI Computational Aesthetic Workshop*. Boston, MA, USA, July 16, 2006.
26. A Computational Model of Narrative Generation for Suspense. Cheong, Y.-G., In the AAAI Doctoral Consortium, Boston, MA, USA, July 16-17, 2006.

EU PROJECT REPORTS

27. EU FP7 ICT project SIREN: D2.3 - System Requirements Document
28. EU FP7 ICT project SIREN: D3.1 - Individual and Group Player Models
29. EU FP7 ICT project SIREN: D3.2 - Adaptive Game Authoring for Conflict Resolution

PAPERS RECENTLY
SUBMITTED OR IN
PREPARATION

Cheong, Y.-G. and Young, R. M. Suspenser: A Story Generation System for Suspense, submitted to IEEE Transactions on Computational Intelligence and Artificial Intelligence in Games.

Cheong, Y.-G., Holmgård, Berger, F., Yannakakis, G. N.. Towards Modelling Conflict Experience for Serious Games for Children, for submission to User Modeling and User-Adapted Interaction.

RESEARCH PROJECT
EXPERIENCE

Samsung Advanced Institute of Technology, South Korea

R&D Staff

March, 2008 - August, 2010

- Intent-Aware System (2009 - 2010): Project technical leader. Designed system framework for recognizing users intention on a mobile platform and energy saving prototype. Investigated computational models of intention and machine learning techniques. Implemented an intent-inferring prototype using the 2.0 Pellet inference engine.
- Interactive Story Authoring Systems (2008): Project leader. Designed a complete architecture for interactive storytelling in a 3D graphic environment. Designed an xml schema for interactive story representation. Designed and developed an interactive content authoring tool.

North Carolina State University, Raleigh, North Carolina, USA

Research Assistant

August, 2004 - May, 2006

NSF funded. Duties include exploring the use of AI models of tasks to create computational model of story generation and concise natural language instructions.

- Computational Models of Narrative Generation (2005-2006)
Researched narrative generation in interactive and non-interactive narrative generation. Designed, implemented, and evaluated a framework to summarize stories and to create a suspenseful story using a planning technique.
- Automated Warning Generation (2004-2005)
Reviewed dynamic user interface literature and natural language generation techniques. Researched and developed a prototype of an automated prohibitive instruction generation system. Built plan operators for dynamically generated instructions in Windows-based simulation environment.

Sungkyunkwan University, Seoul, South Korea

Research Assistant

March, 1996 - Feb., 1998

Korea Telecom funded. Investigated machine learning algorithms for vision recognition. Administered research projects. Wrote research papers and project reports.

- Eye Detection in Dynamic Images (1996-1997)
Researched neural network techniques and dynamic image recognition. Implemented an ART neural network algorithm to predict eye trajectories in C. Devised an effective image processing algorithm for eye detection. Wrote a technical report and paper.

TEACHING EXPERIENCE

IT University of Copenhagen, Copenhagen, Denmark

Lecturer

August, 2012 - current

- Advanced Topics in Game Technology, Fall 2013: Co-lecturing on writing master thesis and holding supervising sessions for term projects.
- Procedural Content Generation in Games, Fall 2013: Will give a lecture on AI planning-based story generation.
- Affective Computing, Spring 2013: Gave a lecture about serious games for conflict.
- Advanced Topics in Game Technology, Fall 2012: Managed the course. Developed course syllabus and lecture contents for master thesis preparation and interactive storytelling

techniques. Administered the course management. Graded assignments and exams. Lectured 17 master students.

North Carolina State University, Raleigh, North Carolina, USA

Teaching Assistant

August, 2001 - May, 2004

Graded assignments and projects. Held office hours regularly. Assisted developing and grading exams. Developed course web pages. Provided technical assistance with Java programming, C, MySQL, and LISP.

- CSC246: Concepts and Facilities of Operating Systems, Spring 2004
- CSC246: Concepts and Facilities of Operating Systems, Summer 2004
- CSC512: Compiler Construction, Fall 2003
- CSC246: Concepts and Facilities of Operating Systems, Spring 2003
- CSC540: Database Management Concepts and System, Fall 2002
- CSC411: Introduction to Artificial Intelligence, Spring 2002
- CSC520: Artificial Intelligence, Fall 2001

Sungkyunkwan University, Seoul, South Korea

Teaching Assistant

1996

Lectured classes of over 40 students. Developed the course syllabus. Developed lecture contents. Graded assignments and exams.

- UNIX Practice Spring 1996
- Circuit Design and Practice Fall 1996

STUDENTS ADVISING

IT University of Copenhagen, Denmark

Master's Students Supervised

- Achim Hermann Lorenz Wache: Towards New Storytelling Techniques In Video Games (co-advised with Daniel Vella) - 2013
- Tilman Geishauser: Prototyping a model for social simulation gameplay (co-advised with Mark Nelson) - 2013
- Alaina Kealoha Jensen: : Big Data Analysis for Predator Detection (co-advised with Julian Togelius and Byung-Chull Bae) - 2013
- Elin Rut Gudnadóttir : Big Data Analysis for Predator Detection (co-advised with Julian Togelius and Byung-Chull Bae) - 2013
- Miki Tejlbo: Improving Balance in Generative Approaches to Character Animation (co-advised with Mark Nelson and Alessandro Canossa) - 2012
- Miika Ilari Arhippa Pirtola: Non-Linear Chronology in a Game (co-advised with Mark Nelson) - 2012
- Christian Højgaard: query disambiguation - 2012
- Joachim Sejr: query disambiguation - 2012
- Spiros Giannatos: evolutionary story generation (co-advised with Mark Nelson and Georgios Yannakakis) - 2011, 2012
- Robert van Leeuwen: story question and answering (co-advised with Mark Nelson) - 2011

ACADEMIC SERVICES

Organizing Committee

Organizing 2nd Workshop on Games and NLP (GAMNLP-13), ICIDS, Istanbul, Turkey, November, 2013

Organized Game Lecture Series, ITU, Denmark, Spring, 2013.

Chaird the PhD seminar, Worlds, Stories, and Games (WSG). 5 ECTS. ITU, Denmark, May, 2011.

Technical Committee

IEEE, Games Technical Committee (GTC) of the Computational Intelligence Society (CIS).

Program Committee

AAAI Artificial Intelligence for Interactive Digital Entertainment (AIIDE), 2013.

1st Workshop on Games and NLP (GAMNLP-12), 2012.

IEEE Conference on Computational Intelligence and Games (CIG), 2013, 2012, 2010.

Intelligent Narrative Technologies Workshop (INT), 2013, 2012, 2011, 2009.

Artificial Intelligence for Serious Games Workshop, AIIDE 2012.

International Conference on Interactive Digital Storytelling (ICIDS), 2013, 2012, 2010, 2009.

International Conference on Robot Intelligence Technology and Applications (RiTA), 2013, 2012.

Workshop on Intelligent Cinematography and Editing (WICED), FDG 2013, 2012.

15th Portuguese Conference on Artificial Intelligence (EPIA), 2011.

International Conference on Foundations of Digital Games (FDG), 2009.

Samsung Humantec Research Competition, 2008.

Journal Reviewer

IEEE Transactions on Affective Computing, 2012.

Journal on Computing and Cultural Heritage, 2012.

ACM Computers in Entertainment (CIE), 2011.

IEEE Transactions on Computational Intelligence and AI in Games (TCIAIG), 2013, 2011, 2010.

Conference Reviewer

ACM Conference on Human Factors in Computing Systems (SIGCHI), 2010.

Cognitive Science (CogSci), 2009.

Samsung Humantec Research Competition, 2009.

International Conference on Cognitive Modeling (ICCM), 2009.

Invited Talks and Other Presentations

Yun-Gyung Cheong. SIREN - Social games for conflict REsolution based on natural iNteraction. KAIST, South Korea, September, 2011 (invited talk).

Yun-Gyung Cheong. Narrative and Authoring Systems. WSG seminar, ITU, Copenhagen, Denmark, May, 2011.

Yun-Gyung Cheong. A Computational Model or Narrative Generation for Suspense, ITU, Copenhagen, Denmark, August, 2010.

Professional Society Membership

Institute of Electrical and Electronics Engineers (IEEE)

Association for Computing Machinery (ACM)

Association for the Advancement of Artificial Intelligence (AAAI)

GALA - European Network of Excellence on Serious Games

Leadership Activities

Treasurer, WICS (Women in Computer Science), North Carolina State University, 2005.

Departmental Ambassador, Office of International Services, NCSU, 2003-2006.

Treasurer, Women in LG Electronics Research & Development Center, LG Electronics, 1999.

President, Voice of Science (Environmental Club), Sungkyunkwan University, 1993.