# Jinghui Cheng

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## Education

**Ph.D. in Computer Science** – Human Computer Interaction track
DePaul University, Chicago, IL. September 2011 – present (expected August 2016)

- *Advisor*: Dr. Cynthia Putnam
- *Dissertation Title*: Supporting Therapy-Centered Game Design for Brain Injury Rehabilitation

**M.S. in Computer Systems Engineering**
Xi'an Jiaotong University, Xi'an, China. September 2006 – June 2009

**B.S. in Information Engineering**
Xi'an Jiaotong University, Xi'an, China. September 2002 – July 2006

## Research Experience

**Research Assistant** in College of Computing and Digital Media, DePaul University.
June 2013 – present

**Project:** Supporting the use and creation of games for brain injury rehabilitation

**Studies to support therapists**

- Conducted interviews, observations, and diary studies with therapists who use commercial video games (e.g. Kinect, Wii, iPad games) with patients who have had a brain injury
- Conducted qualitative and quantitive analysis of data collected from user studies and generate a knowledge-base about commercial game use for brain injury rehabilitation
- Created and conducted user studies on wireframes for an information system aimed to help therapists select appropriate games that match their therapeutic goals and patient attributes
- Based on the wireframes, developed and conducted user studies on a working prototype of the system (can be accessed at: http://tinyurl.com/TherapyGameR)

**Studies to support game designers** (on-going)

- Through analyzing data from therapists' accounts of game use in brain injury therapy sessions, created Therapy-centered Game Design Patterns aiming to structuralize design knowledge for brain injury rehabilitation games
- Interviewed professional game designers who focused on games for health to understand how they approach designing games and collect their feedback on example patterns
- Created and conducted user studies for a tool aimed to help game designers browse and select the Therapy-centered Game Design Patterns (the tool can be accessed at: http://tinyurl.com/TherapyGameDesign)

**Research Assistant** in Systems Engineering Institute, Xi'an Jiaotong University.
February 2005 – June 2009

- Researched on optimal scheduling algorithms to solve electrical grid scheduling problems.

## Industry Experience

**User Experience Research Intern** in Platfora, San Mateo, CA, June 2015 – September 2015

- Conducted benchmarking usability studies for two major product components
- Explored the use of Kano model as a means to prioritize usability issues
- Conducted an accessibility assessment of the product

**Game Engine Engineer** in 3DiJoy Corporation, Shanghai, China, February 2010 – July 2010

- Developed the network engine for motion-based games
- Developed the player communication/interaction dashboard for the gaming system.

**Game Engine Engineer** in Giant Interactive Group, Shanghai, China, July 2009 – February 2010

- Developed the server-side game logic for a Massively Multiplayer Online Role-Playing Game

## Teaching Experience

Lecturer on record of *GAM312: Game usability and playtesting*, DePaul University. September 2014 – December 2014.

Exploring the relationship between culture and games, Guest Lecturer in *GAM312: Game usability and playtesting*, DePaul University. March 2014 and March 2013.

Game design considerations for diverse users, Guest Lecturer in *HCI440: Introduction to User-Centered Design*, DePaul University. March 2013.

Motion-based gaming for brain injury rehabilitation: research methodologies and analyzing video, Guest Lecturer in *HCI445: Inquiry Methods and User Analysis*, DePaul University. October 2012.

## Publications

**Cheng, J.**, Putnam, C., & Guo, J. (2016). "Always a Tall Order": Values and Practices of Professional Game Designers of Serious Games for Health. Accepted to appear in *Proceedings of the thrid ACM SIGCHI annual symposium on Computer-human interaction in play*. (Acceptance Rate: 29%)

Putnam, C., **Cheng, J.**, Lin, F., Yalla, S., & Wu, S. (2016). "Choose a Game": Creation and Evaluation of a Prototype Tool to Support Therapists in Brain Injury Rehabilitation. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems - CHI '16* (pp. 2038–2049). New York, New York, USA: ACM Press. doi:10.1145/2858036.2858258 (Acceptance Rate: 23%)

**Cheng, J.**, & Putnam, C. (2016). "Choose a Game": A Prototype Tool to Support Therapists Use Games in Brain Injury Rehabilitation. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '16* (pp. 3659–3662). New York, New York, USA: ACM Press. doi:10.1145/2851581.2890240 (Demo)

**Cheng, J.**, Mulholland, J., & Shankar, A. (2016). Using the Kano Model to Balance Delight and Frustration for an Enterprise Application. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '16* (pp. 3021–3027). New York, New York, USA: ACM Press. doi:10.1145/2851581.2892284 (Poster - Acceptance Rate: 43%)

Putnam, C., Reiner, A., Ryou, E., Caputo, M., **Cheng, J.**, Allen, M., & Singamaneni, R. (2016). Human-Centered Design in Practice: Roles, Definitions, and Communication. *Journal of Technical Writing and Communication*. doi:10.1177/0047281616653491

Putnam, C., Zagal, J., & **Cheng, J.** (2016). You Are Not the Player: Teaching Games User Research to Undergraduate Students. In M. A. Garcia-Ruiz (Ed.), *Games User Research: A Case Study Approach* (pp. 33–53). A K Peters/CRC Press. doi:10.1201/b21564-3

**Cheng, J.**, Putnam, C., & Rusch, D. C. (2015). Towards Efficacy-Centered Game Design Patterns For Brain Injury Rehabilitation: A Data-Driven Approach. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility* (pp. 291–299). ACM Press. doi:10.1145/2700648.2809856 (Acceptance Rate: 23%)

**Cheng, J.**, Putnam, C., & Rusch, D. C. (2015). 'Choose a Game': A Prototype Tool to Support Therapists in Brain Injury Rehabilitation. Demonstration presented at *The 17th International ACM SIGACCESS Conference on Computers & Accessibility*. Lisbon, Portugal. (Demo)

Putnam, C., Dahman, M., Rose, E., **Cheng, J.**, & Bradford, G. (2015). Teaching Accessibility, Learning Empathy. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility* (pp. 333–334). New York, NY, USA: ACM Press. doi:10.1145/2700648.2811365 (Poster - Acceptance Rate: 51%)

**Cheng, J.**, & Putnam, C. (2015). Therapeutic Gaming in Context: Observing Game Use for Brain Injury Rehabilitation. In *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '15* (pp. 1169–1174). New York, New York, USA: ACM Press. doi:10.1145/2702613.2732697 (Poster - Acceptance Rate: 41%)

Putnam, C., & **Cheng, J.** (2014). Therapist-centered requirements: A multi-method approach of requirement gathering to support rehabilitation gaming. In *Proceedings of the IEEE 22nd International Requirements Engineering Conference (RE 2014)* (pp. 13–22). IEEE. doi:10.1109/RE.2014.6912243 (Acceptance Rate: 27%)

Putnam, C., **Cheng, J.**, & Seymour, G. (2014). Therapist Perspectives: Wii Active Videogames Use in Inpatient Settings with People Who Have Had a Brain Injury. *Games for Health Journal*, *3*(6), 366–370. doi:10.1089/g4h.2013.0099

Putnam, C., **Cheng, J.**, Rusch, D., Berthiaume, A., & Burke, R. (2013). Supporting therapists in motion-based gaming for brain injury rehabilitation. In *CHI '13 Extended Abstracts on Human Factors in Computing Systems (CHI EA'13)* (pp. 391–396). New York, NY, USA: ACM Press. doi:10.1145/2468356.2468426 (Poster - Acceptance Rate: 46%)

Putnam, C., & **Cheng, J.** (2013). Motion-games in brain injury rehabilitation: an in-situ multi-method study of inpatient care. In *Proceedings of the 15th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '13)* (pp. 1–2). New York, NY, USA: ACM Press. doi:10.1145/2513383.2513390 (Poster - Acceptance Rate: 48%)

Putnam, C., & **Cheng, J.** (2013). Helping therapists make evidence-based decisions about commercial motion gaming. *ACM SIGACCESS Accessibility and Computing*, (107), 3–10. doi:10.1145/2535803.2535804

Putnam, C., Wozniak, K., Zefeldt, M. J., **Cheng, J.**, Caputo, M., & Duffield, C. (2012). How do professionals who create computing technologies consider accessibility? In *Proceedings of the 14th international ACM SIGACCESS conference on Computers and accessibility (ASSETS '12)* (pp. 87–94). New York, NY, USA: ACM Press. doi:10.1145/2384916.2384932 (Acceptance Rate: 28%)

Zhai, Q., Guan, X., **Cheng, J.**, & Wu, H. (2010). Fast Identification of Inactive Security Constraints in SCUC Problems. *IEEE Transactions on Power Systems*, *25*(4), 1946–1954. doi:10.1109/TPWRS.2010.2045161

## Research Community Activities

**Reviewer**, The Third ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY 16) - Papers and Notes, 2016. (Special Recognitions Received)

**Reviewer**, The 15th International Conference on Conference on Interaction Design and Children - Papers and Notes, 2016.

**Reviewer**, 2016 CHI Conference on Human Factors in Computing Systems - Late Breaking Work, 2016.

**Student Volunteer**, 2013 CHI Conference on Human Factors in Computing Systems, Paris, France, April 2013.

## Skills

- User Research Methods:
  Interview, Contextual Observation, Diary Study, Usability Study, Game Playtesting
- User Research Tools: Morae, WebEx, Axure
- Data Analysis Tools: Atlas.ti (Certified Student Trainer), R, Matlab
- Programming: Java, C/C++, C#, SQL, Matlab
- Web Development: HTML, CSS, JQuery, Bootstrap
- Other Tools: Adobe Illustrator, Adobe After Effects