ZHENGXING CHEN

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Education

Northeastern University
PhD, Computer Science, expected 2018.

Beijing University of Posts & Telecommunications
BA, Information Engineering, 2013. GPA: 3.6/4.0 (Top 10%)

Experience

Video Game Lab, Northeastern University
Research Assistant. 2014.1 - now
Use data mining/machine learning/statistical models for game analytics, including player clustering, in-game behavior prediction, churn analysis and video game outcome prediction.

China Next-Generation Network Center, Tsinghua University
Research Assistant. 2012 - 2013
Participated in developing nationwide mobile application automatic testing platform.

Skills

Python, Java, R

MongoDB, SQL

MapReduce, Spark, Pig

Scikit-Learn, Theano, Pyspark, ggplot2 and Plotly

Projects

MOBA Game Outcome Prediction (Ongoing)

- Predict League of Legends ranked game outcomes based on player match history (17K players and 5 million matches).
- Design a matrix-factorization-like model to model win/loss probability.
- Implemented both local and MapReduce versions of Stochastic Gradient Descent/L-BFGS to train the model by MLE.

Detect Academia Game Community Evolution

- Co-word and co-venue analysis on 48 core venues to identify 20 major research themes and 7 distinct communities, with a total of 8,207 articles and 21,552 unique keywords being analyzed.
- Implemented advanced topic modelling to form temporal article clusters in order to understand game community evolution.

Links between Player Real World Profiles and In-Game Actions

- Extracted in-game actions using frequent pattern mining algorithms from logs of 200 players playing an RPG game.
- Used logistic regression with regularization to predict player real world profiles (e.g., gender, game experience, etc.) based on in-game actions.
- Also vice versa, predicted player in-game actions using their real world information. Published in AIIDE Player Modeling Workshop 2015 as first author.

Graph Mining – Paper Citation Prediction

- Used various algorithms (e.g., Page Rank, TFIDF) to extract features of bibliographical graphs.
- Trained logistic regression model with regularization to predict existence of links in bibliography networks.

- Used MongoDB to store, query and manage 200 GB documents.

Debug, a Health-Promotion Mobile Game

- Developed an Android game that promotes people to walk by "squashing" virtual bugs in camera screens.
- Used OpenCV for object detection and OpenGL to render virtual game elements.
- Published on Google Store.

Publication

Chen, Z., Seif El-Nasr, M., Canossa, A., Badler, J., Tignor, S., and Colvin, R. Modeling Individual Differences through Frequent Pattern Mining on Role-Playing Game Actions. *In AIIDE-2015 Player Modeling Workshop*, 2015.

Melcer, E., Nguyen, T. D., **Chen, Z.,** Canossa, A., Seif El-Nasr, M., and Isbister, K. Games Research Today: Analyzing the Academic Landscape 2000-2014. *In Foundation of Digital Games*, 2015. **Best Paper**.

Nguyen, T. D., **Chen, Z.,** and Seif El-Nasr, M. Analytics-based AI Techniques for Better Gaming Experience. In Game AI Pro 2, 2015. (Book Chapter)