



# ACADEMIC SEMINAR

## Estimating and Optimizing the Expected Customer Experiences on Slot Machines

This paper derives the game values of slot machines theoretically from the payout distribution. It provides explicit formula for almost all quantitative measurements that are of interest to both casino managers and players: the house advantage, the hit frequency, the customer losing probability, the mean and standard deviation of time-on-device per customer, the mean and standard deviation of time-on-device per losing customer and winning customer, etc. Optimization of the payout distribution will be given to maximize the pulls per losing player and the optimal payout and probability lists will be also shown. Some numerical results will be given and compared with each other. These results can be utilized by slot managers to evaluate the impacts of slot machine payout distribution to customer experiences and then help to design the appropriate payout distribution that gives the best trade-off of customer experience and casino gain.

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Prof. Rose Liu got her PhD in Industrial Engineering Management from Hong Kong University of Science and Technology. She then applied her knowledge in Operations Research in an Operations Research consulting company in Singapore before she joins University of Macau, Faculty of Business Administration. Prof. Liu's research interests include supply chain management, logistics management, hospitality management, operations management in commercial gaming industry and commercial game design and analysis. Her research results had appeared in journals like *Management Science*, *Operations Research*, *International Journal of Hospitality Management*, *European Journal of Operations Research*, *International Journal of Production and Economics* and *IIE transactions* etc. .

**Date: 23 May 2012 (Wednesday)**

**Time: 14:30 – 16:00**

**Venue: SEK210, 2/F, Simon & Eleanor Kwok Bldg.**

**Language: English**

**\*\*\* All are Welcome \*\*\***