

2017 Undergraduate Research Symposium

The Best Oral Presentation For Humanities and Social Science

Awarded to: Shayla Schlossenberg

Project Topic: Space, Care, and Funds: The Spectrum of Accommodation for Stakeholders of a Shanghai NGO

Abstract

“Space, Care, and Funds: The Spectrum of Accommodation for Stakeholders of a Shanghai NGO” unpacks how a social service is rendered in China through the daily practices of one outreach center in Shanghai. This project focuses on how relationships with clients, international partners, and the state are formed and how this comes to bear on program development. The study takes the form of an oral history of Shanghai Commercial Sex Worker and Men Who Have Sex With Men Center (SCMC) [上海心生], made through interviews with Tony Zheng [郑煌], the founder and current director of SCMC, and participant observation of the SCMC center. The investigation finds that considerations of partners of the center are complex, as the organization must figure out where to come into contact with possible partners and clients, how to create a particular relationship to suit the needs of that partner, and how to sustain that relationship in order to sustain the organization.

The Best Poster Presentation For Humanities and Social Science

Awarded to: Shiqing Hua, Tiange Ye, Jianing Zhao

Project Topic: An Empirical Test of China’s Market Sensitivity in the Context of Unconsolidated Wealth Management Products

Abstract

Commercial banks in China face strict regulations on the capital requirements and deposit rate from the central bank PBOC and China Banking Regulatory Commission. As a result, the banks have significantly increased their of balance sheet activities, mainly through issuing Wealth Management Products. However, this “regulatory arbitrage” contains substantial rollover risk when huge volume of WMPs mature. We are interested in examining whether the market can recognize the risk and if so, how does it react.

We investigated the scale of Wealth Management Products in China, analyzed the trend of annualized yields as well as the issuer’s stock price sensitivity to the level of shadow banking activity. We find that (1) the excess weekly stock return is lower issuing banks with the more WMPs issued; (2) the negative impact of WMPs Issuance over excess stock return is more prominent for those small and medium-sized banks; (3) and under bad liquidity condition, banks would raise liquidity through issuing more WMPs. Overall, the market is reacting to the issuance of WMPs, but no attention appears to be paid on matured WMPs.

The Best Oral Presentation For Business

Awarded to: Bingqing He

Project Topic: Empirical Analysis of SSE 180 Index Effect on the China's Stock Market

Abstract

In this research, I attempt to observe the Index Effect on the Shanghai Stock Exchange Composite Index 180 (SSE 180). Firstly, I am interested in the significance of SSE 180 Index Effect on the Chinese stock market. In other words, empirical analysis will be applied to find numerical evidence of price and/or volume changes and the recovery time. Secondly, I will place emphasis on the SSE 180 adjustment during stock market crashes, specifically in 2015. During

the first half of 2015, the Shanghai Composite Index rose up from 2400 points till 5000 points. However, fortune waned in the speed of downslope of a roller coaster in July 2015. Thousands of dollars evaporated. On July 8th 2015, Shanghai Composite Index closes at 3507 points. Compared to the highest point of 5178 points on June 12th 2015, the Index slipped and lost more than 30%. For such a volatile period, I would like to investigate the correlation between the Index Effect significance with the macro- environment of the index. Thirdly, I will compare the intensity of index effect on SSE 180 with it on S&P 500. Based on the comparison, I would like to observe how the arbitrage opportunities are enlarged or reduced in the Chinese stock market. In Mainland China, retail investors have more impacts on the stock market. Different from mature markets, the Chinese market participants heavily consist of retail investors.

The Best Poster Presentation For Business

Awarded to: Tiange Ye & Kangni Yu

Project Topic: Go Beyond the CAPM: An Empirical Test in China's Stock Market

Abstract

The Capital Asset Pricing Model (CAPM) is one of the most well-known pricing models. The CAPM is designed to estimate the rate of return of an asset based on its un-diversifiable risk.

In 1972, Black, Jensen, and Scholes published their empirical test result of the CAPM for the U.S. Stock market. Their research reveals a pattern in which the CAPM misprices the stock price. This pattern is known as "a flatter Security Market Line (SML)" phenomenon. In 2014, this pattern was reinterpreted and extended by Frazzini and Pedersen in their research paper "Betting Against Beta".

However, most of the researchers study the U.S stock market or other mature international financial markets, and the flatness of the SML has rarely been specifically tested in the Chinese market. Given China's increasingly important impact on the world economy and China's stock market's potential critical role in acting as a mechanism for capital allocation, a sophisticated understanding of the stock pricing in the China's stock market is therefore of great importance. This research intends to conduct an empirical test of the CAPM for China's stock market using both time series regression and cross-sectional regression.

The Best Oral Presentation For Science, Technology, Engineering, and Math

Awarded to: Ann Fan Yang

Project Topic: The Lung Microbiome in Asthma Patients: A Re-Investigation with Persistent Gene Filtering

Abstract

Horizontal gene transfer—the movement of genetic material between organisms—is a common phenomenon among prokaryotes, and genes coding for essential products and processes tend to persist throughout time and species. This cluster of persistent genes may be obscuring meaningful functional analysis of the microbiome by creating a database bias towards these overabundant genes. This study looks to reinvestigate of microbiome composition of asthma patients by filtering bacterial evolutionary persistent genes.

The Best Poster Presentation For Science, Technology, Engineering, and Math

Awarded to: Kenny Song

Project Topic: Multi-Agent Deep Reinforcement Learning Algorithms

Abstract

Deep reinforcement learning (DRL) combines RL algorithms with deep neural networks as function approximators. Impressive progress has been made in the recent few years, such as beating Atari video games or Go grandmasters.

Most current research focuses on single-agent tasks, e.g. single player games such as Pacman. However, these RL algorithms scale poorly to high-dimensional action spaces; for n agents, each with m actions denoted as one-hot vectors, the action space is $\{0, 1\}^m$. Learning structure in this action space can lead to optimal coordinated action between agents.

We explored two multi-agent algorithms that are more efficient than traditional approaches:

- 1) Policy gradient with an LSTM policy net and MLP value net baseline
- 2) SARSA with an LSTM-MLP Q-function

The Best Technology/Visual Demonstration

Awarded to: Jiadong Du

Project Topic: Minus E

Abstract

Originally, as a DURF project, I was building a robot tour guide for NYU Shanghai, but then I realized there are a lot of issues with indoor navigation that are very hard to solve. So as a continuation, I am building a robot that helps me to create large scale drawings with the reference to an image of my choice.

The reference image will be converted to grayscale and divided into a 20 by 20 grid (or the canonical 32 by 32, if time permits). Each time the robot creates an abstract/representational drawing within one piece of 20-by-20-cm paper, achieving the same tone as the corresponding cell of the reference image. All 400 (or 1024) small drawings will be put together as one 4-by-4-meter (or 6.4-by-6.4-meter) drawing that represents the reference image.

The Best Technology/Visual Demonstration

Awarded to: Lewei Huang

Project Topic: Cardboard Shikumen

Abstract

Cardboard Shikumen is a web-based virtual reality project aiming to document neighbourhoods featuring Shikumen architecture in downtown Shanghai.

Cities with long histories often face the dilemma between preserving old architectural heritages and making space for new developments. This problem is especially severe in developing countries where the zeal for building the new often overshadow the need for preserving the old. In Shanghai, many neighbourhoods of traditional Shikumen houses ('stone gate houses'), featuring an architectural style unique to the city that blends Chinese and Western architectural influences, are quickly disappearing due to the accelerating urban renewal processes in the city, largely driven by China's real estate boom.

In this project I demonstrate my experiments in documenting the architectural heritages of traditional Shikumen houses using web-based virtual reality technologies. Specifically, I document and present a Shikumen neighbourhood in southern Zhabei District, Shanghai. Using 360-degree panorama cameras, I captured photo and video footages of the neighbourhood in June-July 2015 and March-April 2017. The footages are displayed in a web-based virtual reality interface that allows the user to visit the neighbourhood on their computers or phones, and switch back and forth between the footage from different years to observe the changes that have happened over time on the neighbourhood.

The Most Popular Presentation

Awarded to: Julie Flood Hauge & Maximilian B Reiff

Project Topic: ETA Bikes

Abstract

The creation of a company that offers a fleet of bikes scattered around the city that can be used by anyone who has the app, a small deposit, and sufficient money in their account: scan the QR code on the bike to unlock it and ride for as long as you want. You are charged based on time, and when you're done with the ride, lock the bike to end your trip. No need to return the bike to a specific location, just put it down anywhere and it'll be picked up by the next rider! All our bikes are GPS tracked so we can see where each one is and in their app, users can see the location of all available bikes; happy riding!

