Undergraduate Research Symposium
CLASS OF 2018
NYU Shanghai Undergraduate Research Symposium

Welcome to the second annual NYU Shanghai Undergraduate Research Symposium, a university-wide celebration of research by graduating seniors spanning the arts and sciences, engineering and business.

The Symposium showcases recently completed projects by Major Honors students, as well as research papers and creative work undertaken by graduating students for their Capstone Projects, Independent Study Courses and as part of the Dean's Undergraduate Research Fund (DURF). Projects are divided into three categories: one-on-one poster presentations, technical demonstrations and art displays or performances. Visitors will have the opportunity to cast a vote for the project that most impresses them, while a panel of NYU Shanghai faculty and external judges from local universities and industries will choose a winning presentation for each category.

We hope you enjoy your visit!

John Robertson
Assistant Provost for Academic Affairs New York University Shanghai
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Symposium Schedule

1:00 PM    Symposium Opens

1:00-2:55 PM    Poster Presentations 2F & 3F Corridors
- Business, Economics, Humanities, History, and Social Science
- Computer Science
- Mathematics and Science (Biology, Neural Science, Physics)

1:00-2:55 PM    Technology/Visual Demonstrations 8F IMA Lab
- Interactive Media Arts

1:00-2:55 PM    Photography Exhibition 3F outside Auditorium

2:00-2:40 PM    Performing Arts Auditorium

3:00 PM    NYU Shanghai Alma Mater
Keynote Speech & Award Ceremony Auditorium
Floor Plan for Undergraduate Research Symposium

Mathematics and Science Poster Presentation

Computer Science Poster Presentation
Types of Presentation

1. Poster Presentations:

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<tr>
<th>Project Subject</th>
<th>Guidelines and Requirements</th>
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<tr>
<td>Biology</td>
<td>Students will have 2 hours to stand with their posters and give a three-minute prepared talk each time a judge stops at their posters. Each time will be followed by a one minute period for the judge to ask follow up questions.</td>
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<td>Business</td>
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2. Technology/ Visual Demonstrations:

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<th>Project Subject</th>
<th>Guidelines and Requirements</th>
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<td>Interactive Media Arts</td>
<td>Students will be assigned a small area in which to display their 2D or 3D works. They will have 2 hours to stand with their projects and give a three-minute prepared talk each time a judge stops at their projects.</td>
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Judges & Keynote Speaker
Dengfeng Yan

Dengfeng Yan is a Visiting Associate Professor of Marketing at NYU Shanghai. He has been on the faculty at the University of Texas at San Antonio since 2012. He also taught at HKUST as a visiting assistant professor in the Spring of 2016.

Dengfeng’s research focuses on understanding how consumers respond to numerical information (such as prices and attribute specifications) and how consumer judgment and preferences vary as a function of psychological distance. His research has been published in top-tier journals including Journal of Consumer Research, Journal of Marketing Research, Journal of Consumer Psychology, and Journal of Personality and Social Psychology. He currently serves on the Editorial Review Boards of Journal of Consumer Research and Journal of Consumer Psychology.
Roderick Hills

Roderick Hills, Jr., is an affiliated professor at NYU Shanghai. He is also the William T. Comfort III Professor of Law at New York University School of Law. He has taught at the University of Michigan Law School, Stanford Law School, Columbia Law School, Harvard Law School, and Yale Law School. He holds a JD and a BA from Yale University.


Hills is a member of the New York Bar and has served as a cooperating counsel for the ACLU of Michigan. Hills was the winner of the Paul M. Bator Award for significant public impact through scholarship, excellence in legal scholarship, a commitment to teaching, and a concern for students.
Guodong Chen

Guodong Chen is a Visiting Assistant Professor of Finance at NYU Shanghai. Prior to joining NYU Shanghai, he was a PhD candidate at University of Michigan. He holds a PhD and dual M.A. degrees from University of Michigan, a M.A. degree from Peking University, and a B.S. degree from University of Science and Technology of China.

Professor Chen’s research interests are Banking and Financial Intermediation, Household Finance, Corporate Finance and Financial Economics.

Professor Chen is a member of AFA, AEA, FMA, and Econometric Society.
Yifei Li

Yifei Li is Assistant Professor of Environmental Studies at NYU Shanghai, and Global Network Assistant Professor at NYU. Prior to joining NYU Shanghai, he taught at the University of Wisconsin-Madison. He holds a Ph.D. from the University of Wisconsin-Madison and an LL.B. from Fudan University.

Professor Li’s research examines environmental governance, bureaucracy, and international development. He also collaborates with other scholars to better understand urban sustainability, eco-tourism, participatory planning, and related topics. He has received research support from the National Science Foundation (2013), the University of Chicago Center in Beijing (2014), the China Times Cultural Foundation (2015), and other extramural sources.
Jiayi Du

Jiayi Du graduated from New York University with a master degree of Tourism Management and graduated from Shanghai University of Finance and Economics with PhD degree on Marketing. She is a lecturer in the Shanghai University of International Business and Economics. Her main research topics are strategic marketing and consumer behavior. She is also the consultant and lecturer for Shanghai Disneyland Project. She is the event leader of Shanghai NYU alumni club since 2013.
Ray Wang

Ray Wang graduated with a Ph.D degree in Materials Science from Virginia Tech in United States. Dr. Wang has worked in both National Energy Technology Laboratory and multi-national corporations. Dr. Wang has a wide range of research interests from physical chemistry to industrial manufacturing, especially in chemical and energy technologies. In the past 10 years, Dr. Wang did research including clean coal technologies, natural gas hydrate, enhanced oil recovery and shale gas recovery.

Dr. Wang has experience from technology development to commercialization. Ray was invited to give trainings at energy workshops jointly held by US Trade and Development Agency and National Energy Administrative of China. Dr. Ray Wang has much experience in managing overseas / cross-culture joint venture company. Ray is currently the business development manager for Asia for Sasol Co. Ltd., focusing on joint venture creation, M&A and new business development in Asia.

In 2016 Dr. Ray Wang was awarded ‘Future Leader of the year – US/China Business Exchange Award’ by the American Chamber of Commerce in Shanghai. Dr. Wang has also been a guest instructor for Peking University Business School. He is a board member of the ‘Edgar Snow Memorial Foundation’ in United States, dedicated for the exchange of culture, economy and education between US and China. Dr. Wang is also a triathlete and sabre fencer.
Chao Zhang

Dr. Chao Zhang is an assistant professor in the Department of Sociology, Tongji University. She received her doctorate in sociology from the University of Manchester (2007-2011, fully funded by UK/China Scholarship for Excellence Programme).

Her main interests include gentrification studies, sociology of consumption, globalisation and modernity. She teaches undergraduate courses History of Western Sociology, Culture and Mass Media, Environmental Sociology. She is awarded Shanghai Pujiang Talent Scheme, and the University Excellence Prizes in Teaching, Dissertation Supervision and Student Training. Having published in Social Science Research, Routledge International Handbook of the Sociology of Art and Culture, she has also provided consultancy for cultural and planning sections. Besides, she also serves as the vice secretary of Chinese Sociology of Consumption Committee, and external peer reviewer for Journal of Urban Affairs and Chinese Journal of Sociology.
Richard Brubaker
Driven by the belief that change begins with a single step, Richard Brubaker has spent the last 15 years in Asia working to engage, inspire and equip those around him to take their first step. Brubaker acts as a catalyst to drive sustainability, bring about needed changes in leadership and business models, and recalibrate old models so that new opportunities can be captured. His work centers around building foundations of knowledge, understanding core issues, engaging stakeholders and doing what it takes to move forward.

Currently, as Managing Director of Collective Responsibility, Founder and Executive Volunteer of HandsOn China and Visiting Professor of Sustainability at the China Europe International Business School (CEIBS), Brubaker focuses on building platforms that promote long-term organizational capacity to address the economic, environmental and social hurdles that China faces as the country’s economic growth accelerates.

To date, Brubaker has overseen the development and execution of more than 200 projects focused on solving the social, environmental and economic challenges that are faced in Asia. He is regularly invited to speak about his work in social innovation & entrepreneurship, sustainability, corporate social responsibility and leadership. Brubaker holds a Masters in International Management from the Thunderbird School of Global Management. He serves as the Vice Chairman of the Corporate Social Responsibility Committee of the American Chamber of Commerce in Shanghai.
You can follow him on Twitter at @richbrubaker
Gus Xia

Gus (Guangyu) Xia is an Assistant Professor/Faculty Fellow of Computer Science at NYU Shanghai, and also an affiliated faculty at NYU Tandon. He holds a Ph.D. in Machine Learning from Carnegie Mellon University, where he worked with Prof. Roger Dannenberg.
Yingzhuo (Joyce) Fu is an Assistant Professor of Practice of Data Science at NYU Shanghai. She received her Ph.D. in Applied Statistics from the University of California, Riverside in March 2013. She focused on change-point detection methods with discrete data in her Ph.D. study and published her research findings in ASMBI (Applied Stochastic Models in Business and Industry), gave/coauthored several international conference talks such as JSM, QPRC.

Prior to joining NYU Shanghai, she worked as a data scientist at MarketShare (Los Angeles) during 2012-2016, using online marketing/transaction data to build digital attribution models and using live sales data to provide dynamic pricing recommendations.
Olivier-Gilles Marin
Olivier Marin is Associate Professor of Practice of Computer Science at NYU Shanghai. Olivier received his PhD in Computer Science in 2003 from the Universite du Havre, France. He also holds a tenured Associate Professor position at Paris-Sorbonne Universités in France. Olivier is an expert in Operating Systems and Distributed Systems. His current research focuses on distributed middleware solutions for dependability in unstable environments such as delay-tolerant networks, clouds, and exascale networks. His research interests include fault tolerance, reputation systems, multi-agent systems, blockchains, and Big Data.
Jungseog Kang is an assistant professor of Biology at NYU Shanghai. Prior to joining NYU Shanghai, he was a research scientist at UT southwestern medical center. He holds a Ph.D. from UT Austin and a B.A. from KAIST in Korea.

Professor Kang’s research interests are chromosome segregation, mitosis, and antimitotic cancer drug screen. His works in these fields have appeared in Journal of Cell Biology, Journal of Biological Chemistry, PNAS, Molecular Cell, Cell, and others.

He studies how mitotic checkpoint pathway ensures faithful chromosome segregation in higher eukaryotes and tries to build quantitative models of mitotic process by which therapeutic intervention of cancers can be probed.
Li Li

Li Li is an Associate Professor of Neural Science and Psychology at NYU Shanghai. Prior to joining NYU Shanghai, she was an Associate Professor of Psychology at The University of Hong Kong (HKU). She holds a PhD in Cognitive Science from Brown (Providence, RI, US), and a BS in Psychology from Peking University (Beijing, China).

Professor Li’s research interests include human perception and action, eye-hand coordination, and virtual reality. Her work has appeared in top neuroscience, psychology, and engineering journals. She is an Action Editor for Perception and i-Perception (Sage), eNeuro (Society for Neuroscience), and on the Editorial Board of Displays (Elsevier).
Yuning Liu is a Visiting Assistant Professor of Mathematics at NYU Shanghai. Prior to joining NYU Shanghai, he was assistant professor of mathematics at Universität Regensburg, Germany. He holds a PhD from Institut Élie Cartan Nancy, France.

Liu’s research interests are mathematics of fluid mechanics and control theory. His work has appeared in the SIAM Journal on Mathematical Analysis and ESAIM: Control, Optimization and Calculus of Variations.
Technology/Visual Demonstration

Leon Lu

Leon Lu is a designer, researcher and educator who works at the intersection of design, technology and making. He holds a Bachelors of Science in Chemistry from Delhi University in India and a Masters of Design from OCAD University in Toronto, Canada. His work explores the impact of technology on human behaviour through tangible real world interactions using design research methods to create behavioural change.

He is currently a Resident Research Fellow at the Interactive Media Arts program at New York University, Shanghai.
Technology/Visual Demonstration

**Eddie Wu**

Eddie Wu, co-founder of One Step Ahead Education (1SA), a boutique educational consulting firm. Together with his partners at 1SA, Eddie helps students find the best of themselves in their pursuit of quality education overseas. Prior to 1SA, he worked at Shanghai Disney Resort, Deloitte Consulting and Shanghai Media Group. Outside of education, his passions include linguistics, art history, and comparative cultural studies. Eddie holds an MBA from NYU Stern School of Business and a BA in International Chinese Studies from East China Normal University.
Technology/Visual Demonstration

Joshua Fu

Graduated from NYU Stern in 2003, Joshua Fu is the Founder and Chairman of HOIC Group, a global business consulting and investment management company with focus on country development advisory including policy analysis and advisory, cultural and tourism planning and development, urban development planning, conceptual and strategic design and planning, financial planning and structuring, content development including IP creation, development, and acquisition advisory, and related branding, marketing and PR advisory.

The world is now closer than ever with every country linked to each other through culture, commerce, technology, the arts and much more. HOIC and its team of diverse global professionals are devoted to connecting the most synergistic global markets together, enabling better communication, connection and commerce between all of them. HOIC is actively engaging in the amazing growth in the Middle East, connecting with China, U.S., U.K., France, Italy, Denmark, Japan among many others.
Fito Segrera

Fito Segrera is an artist, technologist and Head of Research/Creation at Chronus Art Center, Shanghai. He studied fine arts and audiovisual/Multimedia production at Jorge Tadeo Lozano University of BogotÃ¡, Colombia and completed a MFA in Design and Technology with honors at Parsons, The New School, New York, while being a Fulbright Scholar from 2013 until 2015. His current research and creative practice appropriates elements from digital philosophy, artificial intelligence, monism and modern physics while using physical computing, software programming and information/telecommunication technologies to inquiry in fundamental ontological questions regarding the nature of reality and the physicality of the universe.

Keynote Speaker

Maria E. Montoya

Maria E. Montoya is the Dean of Arts and Sciences at NYU Shanghai. As Dean, she is responsible for academic affairs, curriculum coordination, and intellectual development of the humanities, social sciences, and natural sciences.

Montoya also is Associate Professor of History at NYU, where she served for several years as director of undergraduate studies, coordinating history courses across the University’s expansive global network and mentoring honors students in the Department of History at the New York City campus. She holds a PhD, an MA, and a BA from Yale University.

Montoya’s research interests are in the history of the American West, as well as in environmental, labor, and Latina/o history. Montoya is the lead author of a US history textbook, Global Americans. She is also the author of numerous articles as well as Translating Property: The Maxwell Land Grant and the Problem of Land in the American West. She is also finishing up a book on housing and healthcare in the United States, Fighting for the Fringe: The Origins of Universal Health Care in the American West, 1909-1950.
Abstracts
Poster Presentations

1:00-2:55 PM 2F & 3F Corridors
Real Time Bidding (RTB) Strategy is playing a more and more important role in successfully winning expected numbers of advertising campaigns with a minimum cost for Demand Side Platforms (DSP). For every impression offered through Sell Side Platforms (SSP), it can be regarded as a new kind of supply since it is unpredictable and unable to be inventoried. Therefore, the core of this thesis would be, how should we build a mathematical optimization model to better catch every impression with the lowest cost, given that the supply is uncertain and cannot be inventoried. The whole thesis would come with a general model with factors in both dimensions and depths, then focuses on a relaxation on certain constraints, and finally find out the solutions base on the previous analysis by setting bounds for both the cost and the numbers of impressions. Some typical mathematical domain knowledge such as theory of probabilities, convex optimization, etc. will be applied to solve the research questions.
This paper investigates crime displacement effect across time periods. It is difficult to isolate crime displacements because crime rates are serially correlated due to multiple reasons. By adopting weather as an instrumental variable, we are able to resolve serial correlation and observe the extent of crime displacements. Specifically, we consider models which link the lagged crime rates with current crime rates, and estimate them using Two Stage Least Square (2SLS) method. Our results suggest that only violent crimes are displaced across time periods by a substantial magnitude. Property crimes are not largely affected. Displacement effect is also found to be much stronger in shorter time periods. Our findings shed a new light on the dynamics of criminal activities and the effectiveness of crime rate reduction policies.
In this project, we studied Volatility Spill-over effect between Option and Future markets with a specific investigation of SSE 50 ETF. Our goal is to estimate the extent to which implied volatility in the SSE 50 option can be used as a meaningful indicator of subsequent realized volatility in the following week of SSE 50 futures' contracts. We used multivariable regression model and derived the measure of implied volatility from Black Scholes formula. Our dependent variable is the Futures' volatility week t and the primary independent variable is Option implied vol week t-1. We will include other control variables (macroeconomic indicators, other correlated market's volatility etc.). We are also trying to use Principle Component Analysis method to narrow down dimensions of explanatory features.
We use a unique micro-level data from a large Nepali household survey to investigate the impact of remittances on financial inclusion - households' access to and use of formal financial services. We measure financial inclusion using three alternative binary variables, which indicate whether households have an account at a formal financial institution, whether households have an outstanding family debt, and whether households purchased loan products from a formal financial institution. Using the probit regression models, we show that remittance recipients are less likely to have an account at a formal financial institution, less likely have an outstanding family debt and less likely to purchase loan products from a formal financial institution. Additionally, we show that the findings are unlikely to be driven by omitted variables.
In this paper, I focus on examining four human figure paintings of two contemporary Chinese artists, Zhang Peili and Geng Jianyi. By contextualizing these paintings in the cultural craze phenomenon and New Wave artistic movement of the 1980s of mainland China, I aim to demystify these paintings in relation to the advent of belated modernism, or rather the "double modernity" in Jonathan Hay's terms. By perceiving those paintings as coded messages of urban life sketches, I argue that these paintings are still in the vein of socialist paintings with a compromise on being abstract in terms of the visual language, and they express certain aspects of urban reality, even though without the artists' direct intention. In order to further substantiate my argument, I also investigate on how the western modern art languages were appropriated by the artists after being filtered through the lens of the cultural and historical juncture of the 1985s in China. This paper bares an aim to fill out the gap left by the lack of scholarship on the early works of those two artists both here and in the west. Meanwhile, it is intended to deepen my previous research on the spectacles of Chinese '85 New Wave movement.
Based on a three-week-long ethnographic study, this capstone project examines the everyday urban dwelling and its transformation in a local neighborhood in Jing’an District, Shanghai. By closely reading six canonical urbanistic thinkers, the study employs experimental participant observation from different perspectives within the neighborhood, which correspond to these urban texts, to present a case that exemplifies the constant process of urban change in which the global and local actors actively engage in socio-spatial production. The ethnography sheds new light on Shanghai’s rapid urbanization, gentrification, and globalization through closely “reading” the elusive and mundane life scenes of a neighborhood under transformation. Supported by empirical evidence, this study confirms Saskia Sassen’s “frontier zone” theory, and suggests that Shanghai as a rising global city forms a “frontier zone” at the heart of its city fabrics, where urban residents strategically utilize their everyday spatial-temporal practice to shape the heterogeneous space. It further argues that Shanghai itself is at an intermediate stage as a global city, where global gentrifiers and local working class’ life temporarily inhabit one place. By narrating the process, the paper poses new questions about the nature of a neighborhood and a city in transition, and demands more scholarly attention on contemporary urban change in Shanghai.
In light of recent revisionist histories of Chinese environmental history, this paper looks to build on existing scholarship by looking at the specific commodity of shipbuilding timber, and the ways in which it is able to illustrate the working of an intraregional system of ecological dependence in South China's maritime resource frontier. Its principal argument is that because the shipbuilding timber crisis was a crisis only of a particular commodity, and because there was an array of incentives that created a convenient "way out" for shipbuilding timber demand through the resource frontier in Southeast Asia, the move of southern Chinese shipbuilding offshore in the Early Modern period became an especially viable option for the industry.
The refugee crisis caused by conflicts in Syria challenges the world community to find workable solutions through international cooperation. However, countries adopt very different policies of accepting Syrian refugees. I want to understand what factors contribute to the different refugee policies in different countries. I am conducting case studies on Jordan and Germany, two countries that have accepted significant numbers of refugees. Jordan, like several other countries are neighbors to Syria, has low economic growth and high unemployment, and faces an seemingly unending influx of Syrian refugees. Germany has a different location and economic situation, but it as well has faced a flood of refugees, while its refugee policies has changed dramatically since 2015 from relatively “open-door” to a more “closed” position. I have also compared the practical obstacles in refugee management in Jordan and Germany. I am evaluating the effectiveness of the policies and identifying potential problems. While it is not the focus of my research, as a Chinese citizen, I am becoming more aware of some lessons from the experience of Jordan and Germany that may have relevance for China. My interest in studying domestic refugee policy started during my semester in Berlin, where I volunteered a local refugee camp. This experience brought me to the first line of the settlement of refugees. I had a chance to learn what the refugees had encountered back home and how they settled down in Berlin.
This study aims to better understand the nexus between policy and data collection in Chinese environmental governance through a case study on environmental emergency monitoring in Shanghai. More specifically, this research explores three main questions: 1) Why does the Chinese government quantify environmental data? 2) How does it quantify environmental data? And 3) What are the implications of quantifying environmental data?

In China, the national government publishes mandates for local Environmental Protection Bureaus to report environmental emergencies. In response, the Shanghai Environmental Protection Bureau collects data on the environmental emergency indicator, which is annually reported in China’s Statistical Yearbook. But little is known about the processes by which these broad national mandates are translated into practical indicators and executed on the local level. Furthermore, once data are collected, how do they in turn inform environmental policy-making?

In order to gain insights into the nexus between data collection and policy making, this study uses process-tracing methods: a mixed methodology of interpreting national policy documents, conducting expert interviews at Shanghai’s EPB, and analyzing data from the Chinese Statistical Yearbook. This study provides policy-informing outcomes and can contribute to a broader academic debate on the strengths and challenges of data-driven policy-making in China.
Social Science

Parents’ Attitude and Actions on Adolescent Romantic Relationships

STUDENT Ke Zhuo (Business & Finance)
Mengxue Qin (Social Science)

PROJECT TYPE DURF

MENTOR Xuan Li

Romance is a significant component of adolescent experience which can exert both concurrent and long-term impact on individuals. Although romantic involvement during adolescence is normative in Euro-American societies, relatively little is known about adolescent romance and their developmental contexts in other cultures. In this study, we investigated parental attitudes towards and actions in response to adolescent romance among contemporary Chinese parents with young adult children (18-22 years; N = 193). Parental attitudes and actions were surveyed using an online questionnaire, with follow-up qualitative interview on a subsample (N= 8). Findings from the online survey suggested that today’s urban Chinese parents view adolescent romance as normative developmental processes, yet many are reluctant to allow their children to be romantically involved before adulthood, emphasizing the adherence to a developmental timetable. Survey results also showed that Chinese parents are motivated to be involved in their children’s adolescent romance and provide support, but are unlikely to verbally communicate with their children on romantic issues. This study offers insights into Chinese parents’ understanding of adolescent development and intergenerational relationships in a country which is influence both by cultural traditions and by rapid social changes, and has wide implications for practice.
This research paper seeks to better understand how three specific "Conservative Christian Legal Organizations" (CCLOs) navigate the relationship between their faith and the law by employing an innovative philosophical framework inspired by the work of theologian H. Richard Niebuhr. Using this framework, I (a) analyze the organizations' key documents (e.g. mission statements, doctrinal statements, etc.) and legal documents, (b) conduct data analysis using the organizations' newsletters, press releases, and correspondences with supporters, and (c) interpret the organizations' responses to interview questions. In doing so, I hope to discover subtle differences between the organizations' messages that point to their potentially different conceptions of the relationship between religious beliefs and legal activism.
Objective: The objective of this study was to perform a meta-analysis of the effects of canine support on various areas of difficulty associated with Autism Spectrum Disorders (ASD), specifically impairments in social interaction and communication, limiting stereotypical behaviors, and the resulting stress and anxiety that the family unit of a child diagnosed with ASD experiences. This study aims to not only provide a synthesized, transparent evaluation of canine intervention, but also to identify the shortfalls of the currently available research in this area and to suggest ways in which future research could be improved.

Subjects: The meta-analysis focused on at studies involving children of the ages 3-15 diagnosed with ASD, and their primary caregivers.

Independent and dependent variables: The target outcomes are divided into three categories: Social interaction of the children, physiological biomarkers of stress experienced by the children, and indicators of stress (either self-reports or physiological biomarkers) of the primary caregivers. The treatments whose effects this study investigated are different forms of canine support, this being an umbrella term involving companion dogs, service dogs and therapy dogs.

Results: As this is an ongoing project, so the official results will be updated once the study is finalized.
Social Science

Differences in Cognitive-Behavioral Therapy Components in Effectiveness for Social Anxiety Disorder and Fear of Evaluation: A Systematic Review

STUDENT Mengxue Qin (Social Science)
PROJECT TYPE Capstone Project
MENTOR Pekka Olavi Santilla

Scholars have defined Social Anxiety as the anxiety specifically manifesting itself in social situations or with other people. The most lenient effect may be mild discomforts that will soon go away. In more severe circumstances, the fear and anxiety will possibly cause serious interferences in many life aspects, which escalates as a disorder. Fear of evaluation has long been identified as a key component in social anxiety. Both fear of negative and positive evaluation has solid correlation with social anxiety disorder. However, few treatment methods have specifically addressed fear of evaluation. The present study intend to examine the different treatment categories that address this particular variation and compare their effectiveness in reducing social anxiety and fear of evaluation, in order to offer more effective alternative in treating social anxiety disorder. Implications and recommendations are also mentioned in the discussion.
Since the economic reform, China has been going through a new wave of revolution — a “consumer revolution” as put by Deborah Davis (2000), the editor of The Consumer Revolution in Urban China. After consumption in China had been suppressed for decades by the socialist government, individuals were finally able to consume more after the 1980s. Throughout this period, “conspicuous consumption”, a term coined by Thorstein Veblen in his 1899 book The Theory of the Leisure Class to describe the display of one’s status and identity through consumption, has always been highly present in China (Zheng 2006: 111).

Entering this conversation, I will examine how conspicuous consumption has developed in China from 1980 to present, and how it is related to macro- and micro-level factors. At the macro-level, I want to explore how changes in policies (particularly the Five Year Plans), overall wealth (such as GNI per capita), and inequality have affected conspicuous consumption in China. At the micro-level, I want to explore how one’s income, age, education, gender and so on affect one’s conspicuous consumption.
Social Science

An investigation into the Impact Race-Ethnicity/Nationality Have on the Experience of Expatriates in Shanghai

STUDENT Maya Williams (Social Science)
PROJECT TYPE Independent Study
MENTOR Todd Meyers

Although foreign nationals make up less than 1% of Shanghai’s population given the city’s ethnic homogeneity-- with about 98% of the population being Han Chinese-- foreigners become a very distinct group. However, little research has been done to understand how differences in background impact the experiences of members of this "group." The aim of this project is to analyze how racial-ethnic identity and nationality may impact the way expatriates in Shanghai perceive their ability to participate in and be accepted into Chinese society. This information is gathered through one-on-one interviews with a variety of expats who have lived in Shanghai for the past year. These interviews offer an in-depth and personal understanding of some of the larger social dynamics observed and experienced by expats.
Historically, independence/separation of a state has been a result of brutal violence, which ultimately led to the loss of human lives, some notable examples include- the disintegration of Yugoslavia, Sudanese civil war, and the partition of the Indian subcontinent. However, not every case of separation of a state has been violent. In regards to separation of a state, there is an outlier- which is the “Velvet Divorce” of Czechoslovakia into Czech Republic and Slovakia in 1993. What makes the split of Czechoslovakia quite unique is how peaceful it was. The study aims to explore the historical, cultural, and economic factors that led to the split. Moreover, the research will also answer why was the dissolution of Czechoslovakia so peaceful? Most of the existing literature that argues about the ‘Velvet Divorce’ is focused on the pivotal role of individual leaders (from Czech and Slovak Republic respectively), but this study is geared towards the role played by the mass media during the Velvet Divorce. I will be extracting my data from an array of sources including but not limited to scholarly research, original content analysis, and public opinion polls in order to showcase the attitudes of Czechs and Slovaks before the split. My key findings will showcase that potentially violent splits can be more peaceful with the particular role of mass media.
As technology is permeating every aspect of our lives, the only tools designed to manage our technological environment, virtual assistants, are confined to narrow ecosystems and cannot interact with the vast majority of software running on our computers, smartphones, or IoT devices. I propose a solution to this challenging issue in the form of a virtual assistant which does not rely on software integrations or APIs, but which instead interacts with other software using emulated human actions and gestures. This would allow for infinite horizontal and vertical scalability, and would enable any end user to further expand the capabilities of the assistant in order to apply it to any technological task achievable by a human-being using software.
Transcribing is a big part of lots people’s jobs. For example, journalists need to transcribe their interviews from speech to text. The invention of speech-to-text algorithms changes the game. Instead of writing down everything, transcribers just need to correct the mistakes in the computer-generated texts. However, transcribers still need to manually control the media player, while working in a text editor. If the transcriber sees a mistake in the text, he or she has to pause the audio, change the text, then resume. It usually happens that the moment you pause the audio, the next sentence already starts. When you resume the audio, you find out that you didn’t catch a few words and need to rewind it a little bit. People spend lots of time trying to get the audio to the right moment. My project is to change the way people control the audio to make the transcribing process more productive. The speech-to-text algorithm also knows the timestamp of each word. I want to combine the editor and the media player into one app that the user can interact with the text to control the audio. One major interaction will be when the user clicks a word the audio starts playing from the corresponding timestamp. I will explore more interactions to make the transcribing process faster.
Graphical simulators of Computer Architecture are conducive to explaining their abstract knowledge. From an empirical point of view, there is also a need for a tool that illustrates the operation of all layers of interface during program execution, starting from a high-level programming language to its most elementary components (transistors, resistors, capacitors). The application is designed for students to improve learning experience.

In order to fulfill such a need, we propose a web application that provides a runtime simulation of multiple layers. The application would reach three objectives -- readability, interactivity and extensibility. Readability is the primary goal. Considering that the amount of information to be conveyed on even the simplest of CPUs is often too complicated for a beginner, it is not pedagogically practical to present the details of one layer all at once. The research would strive to remain highly readable while also maximizing proximity of components in presentation. Interactivity ensures user-friendliness and gives the user an opportunity to become an active learner. Given the options to view the simulation at a microarchitecture level, gate level, or transistor level, users can choose the layer one is mostly interested in, and observe the interaction between components thereof in correspondence to abstract theories. Last but not least, extensibility promises convenience of future development.
Computer Science

NYU Shanghai attendance tracker

STUDENT Daniela Oh (Computer Science)
PROJECT TYPE Capstone Project
MENTOR Olivier Marin

Context
Currently, for NYUSH professors, there is no efficient way to take attendance since NYU does not provide a platform to do so. This is problematic since in many NYUSH classes attendance is part of the grade. Using online solutions such as TeacherKit, MyAT, and TrackCC are a possibility, however, these solutions are not connected to the school’s system (Albert/NYU Classes). This means that professors would have to manually add student names, pictures and create classes for each of the courses that they are teaching that semester. Not only that, but using online solutions also might go against privacy and commitment regulations from FERPA.

Objective
The goal of this project is to create an efficient, secure and reliable attendance tracker. The project will aim to minimize the possibility of false positives and false negatives. It will be easily accessible as a web application with a mobile interface, such that the instructors will not be required to install any apps. It will also aim to be easy to manage and use, with little to no setup required by the professors.
Slime mold, usually found in dark and moist outdoor environment, can live freely as a single cell organism or aggregate together to form multicellular reproductive structures (Wikipedia). Previous experiments have explored slime mold’s capability to solve complex problems in graph theory (Zhang, 2014). In our experiments, we studied slime mold’s periodical memory of external stimulus using Physarum polycephalum—one type of slime mold. Our result shows that Physarum polycephalum can memorized the cycle of light irradiation and preemptively adjust its growth cycle accordingly. We have also adopted the algorithmic features of slime mold to create a musical instrument of New Interfaces for Musical Expression (NIME).
We study the problem of multiset prediction. The goal of multiset prediction is to train a predictor that maps an input to a multiset consisting of multiple items. Unlike existing problems in supervised learning, such as classification, ranking and sequence generation, there is no known order among items in a target multiset, and each item in the multiset may appear more than once, making this problem extremely challenging. In this paper, we propose a novel multiset loss function by viewing this problem from the perspective of sequential decision making. The proposed multiset loss function is empirically evaluated on two families of datasets, one synthetic and the other real, with varying levels of difficulty, against various baseline loss functions including reinforcement learning, sequence, and aggregated distribution matching loss functions. The experiments reveal the effectiveness of the proposed loss function over the others.
I recall being in the backseat on the way to school in my hometown, and hearing my parents say, “I hate this left turn so much; there should be a light here.” I recall for years dodging a pothole on my bicycle, not realizing that those could be reported. I also recall being pleasantly surprised at seeing park renovations, having had no idea that those were in the works. Currently, many smaller cities have lackluster communication between citizens and the government regarding infrastructure concerns from the citizens and infrastructure renovations from the city. We therefore wish to make an interactive map-based communication and citizen engagement tool to fill this gap. While larger cities such as New York have taken advantage of more resources and bigger data initiatives to better represent their construction projects and improve interfaces for citizens, these methods may be less realistic for smaller cities with less data collection. We therefore intend to utilize Natural Language Processing to take advantage of only the existing textual information from the city, and convert that information into mappable data.
The reconstruction of the map or floor plan of an indoor space, usually large, has been a key task in many applications based on indoor positioning, such as location-based recommendation in department stores, and real-time customer traffic monitoring. Traditionally, this task is carried out manually with hands and tape measures. However, the lacking efficiency and inaccuracy has called for an automated, machine-based solution, hence the rise of robot mapping.

Robot mapping utilises self-driven androids to explore the target space. They are usually equipped with a wide variety of sensors to perceive the environment around. Based on the data collected from the sensors, they perform three vital tasks: mapping, locating and navigating. More specifically, they reconstruct the map of the target space, locate themselves in that particular map, and route themselves to parts of the space that have not been explored yet. These three tasks are most usually implemented on top of Simultaneous Locating and Mapping (SLAM) algorithms, such as particle filters, extended Kalman filter (EKF) and GraphSLAM.
While locks have been around for millennia we still face issues with them in our day to day life. What this project aims to solve is the problem of revocable access to locks. Whether digital or physical, when giving someone a key it can be difficult if not impossible to ensure they do not still have access after you stop giving them permission without changing the lock itself. To solve this problem I propose a blockchain system that stores permission access in a hierarchical manner, allowing for easily revocable access to different critical sections. Furthermore utilizing the blockchain would allow for transparency in viewing when a critical section is accessed and by who. The optimal use case for this system is any situation where permission to access a critical section is often passed around among different actors and commonly revoked. This system would be able to be extended to either physical locks such as lockers and airbnbs, or to digital locks such as managing user access permissions as a system admin.
The increasing market share of Android mobile phone nowadays has dramatically stimulated the market of Android mobile phone applications, the amount of malicious apps also grows exponentially. The Android ecosystem is now facing the challenge of more deceptive softwares on app stores. These softwares may not cause direct damage on your privacy or system, but they could increase potential user data leak, cause annoyance to users, or even weaken the system’s protection. The Android community defines this kind of application causing indirect harm to users as “grayware”, a bleeding-edge concept of software. There has not been a global standard that Android market like Google Play can filter grayware. Recent studies show that 11 categories\[2\] of apps can be regarded as grayware in a broad sense: Imposters, Misrepresentors, Madware, Dialers, Prank Programs, Scareware, Rooting Tools, Trackware, Remote Access Tools, Droppers and Hijackers.

In our project, we propose to design a grayware detection framework to help filter grayware in application markets. The main algorithm derives from similar concept as Cypider framework, but requires lots of tweak and innovative methods.
At NYU Shanghai, conflicts occur when scheduling exams and classes. Numerous studies on finding an optimal schedule have developed algorithms that can put all the exams within a certain number of time slots with the fewest time conflicts, while fulfilling as many other requirements as possible, such as no early morning/late evening exams, and no consecutive exams for a student. The problem of assigning exam time is usually depicted as Graph Coloring Problem, where vertices represent classes, and edges between two vertices represent the same students who are enrolled in both of the classes. The weight of each edge is the number of students. The goal of these algorithms is to have a graph with two connected nodes of different colors, where color indicates different exam time. We will use the least amount of colors possible which corresponds to arranging all exams within fewest time slots. Course scheduling incorporates more complicated constraints like professors’ availability and course meeting patterns. We will start with the existing algorithms for exam time scheduling and extend them to class time scheduling. Additionally, we want to increase the efficiency of the existing algorithms, either in terms of arranging time slots or rearranging them when a small change made on the dataset, such as adding a course or changing the length of an exam.
Importance Sampling with LSTM Networks: Preliminary Results

STUDENT Aiwen Xu (Computer Science)
PROJECT TYPE Capstone Project
MENTOR Keith Ross

Importance sampling is one of the methods for estimating multidimensional sums and integrals. However, to find an importance sampling distribution that yields an estimator with a low variance is often not easy. In this project, we aim to improve the importance sampling distribution by using the gradient descent algorithm. We implement this idea in the context of a concrete problem (which is to estimate the normalization constant of the queuing problem) and evaluate its effectiveness.
To address the problem of improving the current RL algorithms to have a robust implementation of computer program, our research project will focus on improving RL in both domains of discrete and continuous control tasks. We aimed to develop a variant of Q-learning and a variant of policy gradient methods that performs well in multiple continuous environments without the need to re-tune the model.
Biology

Transcription profiling of circadian rhythm in Drosophila model of Parkinson’s disease

STUDENT Yiwen Qin (Biology)
PROJECT TYPE Independent Study
MENTOR Danyang Yu

Parkinson’s disease (PD) is the second most prevalent neurodegenerative disorder principally affecting the dopaminergic (DA) neurons 1 and sleep disturbances are very common in patients with PD 2. The fruit flies of Drosophila Melanogaster has been shown a successful model in studying the mechanism of PD and sleep disorder 3. Previous study has shown that DA system plays an undefined role in regulating the circadian locomotor activity of flies 4. Therefore, understanding the biological relationship between circadian rhythm and DA system is crucial for my purpose.
Several kinds of information can be used to determine the direction of self-motion, including visual cue provided by optic flow, non-visual cue provided by vestibular and proprioceptive systems, and target egocentric direction cue provided by the position of a target. Previous study suggests that heading cue specified by optic flow and target egocentric direction are used for the control of steering toward a target. Perception of the direction of goal-oriented locomotion are influenced by the appearance and strength of these two cues. This study examined if they are optimally combined for such task. If they are optimally combined, each cue should be integrated according to their relative reliability.
Neural Science

Magnetic Field Simulation for On-Chip Realization of Bose-Einstein Condensate

STUDENT Yuhang Chen (Physics)
PROJECT TYPE DURF
MENTOR Jeffrey Erlich

My project is to combine different sensor input and find an agreement among three types of information—the electrophysiological (not done yet) neural signal, the animal movement recorded by experimental apparatus and the actual video of the experiment.
Episodic memories formed during the first postnatal period are rapidly forgotten, a phenomenon known as ‘infantile amnesia’. Interestingly, previous work in Alberini Lab shows that the memory during the infantile amnesia period are not lost and can be reinstated by reminder later in life. The infantile memories are stored using mechanisms involving the dorsal hippocampus (dHC). Further, training during this period increases in markers of excitatory synapses in dorsal hippocampus that last for at least 48 hours after receiving the training. Therefore, we are proposing to study how the long-term memory is formed and stored during infantile learning. We focused on learning-induced changes in synapses hippocampus using immunohistochemistry with pre-synaptic marker synaptophysin and post-synaptic marker PSD95. We have found that there is increasing synaptic number, size and also connections, indicating that the hippocampus does develop by training during the period when they experience infantile amnesia.
Math

Mathematical Models of Polymer Dynamics and Self-avoiding Walks

STUDENT Yi (Alice) Yin (Honors Mathematics)
PROJECT TYPE DURF
MENTOR Vladas Sidoravicius

Polymers play an essential and ubiquitous role in our daily life. They range from macromolecule polymer material (for example synthetic plastics and synthetic rubber which replace some metallic materials and become more and more significant of our modern societies) to natural biopolymers (such as DNA and proteins that build up the fundamental biological structure and function of our bodies). Thus, learning polymers’ properties from the molecular point of view through observing their macroscopic behaviors become important.
Math

Mover-Stayer Model with Covariate Effects on Stayer’s Probability and Mover’s Transitions

STUDENT: Chang Li (Honors Mathematics)
Weicheng Zhu (Honors Mathematics)

PROJECT TYPE: DURF

MENTOR: Halina Frydman

A discrete time Markov chain assumes that the population is homogeneous. Each individual in the population evolves according to the same transition matrix. In contrast, a discrete mover-stayer model (MS), postulates a simple form of population heterogeneity; in each initial state there is a proportion of individuals who never leave this state (stayers) and the complementary proportion of individuals who evolve according to a Markov chain (movers). The MS model was extended by specifying the stayer’s probability to be a logistic function of an individual’s covariates but leaving the same transition matrix for all movers. We further extend the MS model by allowing each mover to have her/his covariates dependent transition matrix. The model for a mover’s transition matrix is related to the extant Markov chains mixture model with mixing on the speed of movement of Markov chains. The proposed is estimated using the expectation-maximization algorithm and illustrated with a large data set on car loans.
Math

A Study of Minimal Surfaces

STUDENT  Siqing Zhang (Honors Mathematics)  PROJECT TYPE  Independent Study  MENTOR  Thierry De Pauw

In this independent study we follow the book "A Course in Minimal Surfaces" by Colding and Minicozzi to study basic elements of minimal surfaces. We aim to learn first and second variation formulas, estimates of curvatures and areas, the theory of varifolds, and Plateau problem.
Physics

Flowing Soap Film as an Analogy to Wind Tunnel to Study Transonic Effects around Two-dimensional Objects

STUDENT Sunyi Wang (Mathematics)
Mei Wu (Physics)

PROJECT TYPE DURF
MENTOR Jun Zhang

Wind tunnels are often useful to study the effects of air moving past solid objects simulating the real situation. However, such tunnels usually consume large amount of energy, especially when generating high speed airflow, while the time duration of the continuous flow that can be used for experiments is merely a few seconds to dozens of seconds. In this project, we want to test the possibility of using a vertically flowing soap film to simulate the transonic process, since soap films are by far the closest physical approximation to the concept of a true two dimensional fluid. We measure the flow speed, estimate the wave speed, and measure the mach cone angle since these quantities are key factors that can tell us if the soap film tunnel is eligible to be used as a “wind tunnel” for two-dimensional solid objects.
Technology/ Visual Demonstrations

1:00-2:55 PM
8F IMA Lab
Interactive Media Arts

Lubricated City

STUDENT Isabella Baranyk (Interactive Media Arts)
PROJECT TYPE Capstone Project
MENTOR Rune Madsen

In free trade urbanism, deregulation and concessions are embedded into the city to force informal economies and unmonitored culture to slide off of its surface. They leave behind the control structure for sanitized, tightly managed human life that is portrayed to the outside as a successful machine for economic growth, its gears operating smoothly in absence of anything that would slow them. In a parametrically modeled city, users will be confronted with the fixed ways in which free trade urbanism mandates the lived experiences of its residents.

Lubricated City will be delivered as VR experience formatted in the genre of advertising video that have become an unspoken necessity in the funding and future success of free trade cities. Like the cities themselves, these five- to ten-minute videos follow a stiff formula in the ways they visualize, situate, and talk about the inevitable upcoming success of their subjects. As an immersive, interactive experience, Lubricated City will subvert the standard recipe for these videos by presenting an alternative plotline and allowing users to disrupt the template that organizes it. By presenting a twisted interpretation of the common trope of the FTZ marketing video, Lubricated City hopes to present an alternative view of FTU as a destructive artifact of global neoliberalism, and to encourage its audience to question the dominant narratives representing the FTZ as a successful financial model.
Capsule Food is an interactive project that encourages people to actively appreciate food by engaging their senses through stories that connect food and people. This project proposal outlines the aims of Capsule food to approach concerns that people are unaware of where their food comes from, who has made it, from where it has travelled, and the sounds and smells associated with food. The project investigates a popular dish in Shanghai, notable, Yellow fish noodle (huangyu mian), and create stories of the people involved in the dish and the ingredients in the dish. Through this project, the aim is also that people will continue to reflect on their feelings with food in the future.
The capstone project “Dining in Shanghai” is featuring table top projection mapping to create an immersive dining experience based on story of a traditional Shanghainese dish, the Braised Pork Belly, from the perspectives of three generations of people in a local family. The multi-sensory user experience design will enhance the effect of storytelling, for example, taste of food, sonic environment and visualization elements. It will differentiate from other technology-involved interactive dining projects, illustrating family love, food history and urban development through visualization and interactive installations at the traditional Chinese dining table (八仙桌). It aims to echo people’s memory and emotion about history and family stories. The purpose of this project is to help people intuitively learn about the significance of food in history and urban development, in addition to experiencing the concept of “family” in China.
Interactive Media Arts

Behind the “Truth”

STUDENT Yujia Ni (Interactive Media Arts)

PROJECT TYPE Capstone Project

MENTOR Michael Naimark

As children grow up, they are becoming more mature and more independent. They would spend less time and be less willing to share their stories with their parents. What makes the situation worse is that both parents and children refuse to listen to each other when there is a conflict. However, the relation between parents and children is not weak. In fact, children always care about parents’ feeling and parents are never ungenerous in the matter of love to their children. They just need a proper environment and communication channel to express their real opinions and listen to each other's voice.

I want to use Behind the "Truth", an interactive photo album, to raise people's awareness: stop blaming your parents or children, and start to communicate with each other; do not let misunderstanding widens the gap. It has two parts: one is the projection mapping on a photo album, and the other is the projection on the wall. By interacting with the project, the audience can see the same stories from two different perspectives, both from parents' and children's. Behind the "Truth" is trying to help parents and children understand each other and to send out the message that what you think is the truth may not be the same to other people and that you can see the differences between different minds through communication.
Sex education in Chinese college

STUDENT Zhener Ma (Humanities)
Jiaqi Dong (Business & Finance)
Yilun Wu (Business & Finance)

PROJECT TYPE DURF
MENTOR Marianne Petit

Sex education in Chinese college has much space for improvement since it lacks updated data, appropriate presentation form and effective assessment. This research project looks into the awareness, communication and impression of college sex education in China in order to experiment with a better solution. The project includes making a series of sex education interactive videos that aim to promote Chinese colleges students knowledge about safe sex and thus reduce HIV infection rate, unwanted pregnancy rate and STD rate resulted by unsafe sexual behaviors. The videos adopt a form of animation with pop up quizzes and a sum up test in the end. Research has been done in order to make sure the learning materials and the quiz questions included in the animation is appropriate and valuable for the college students. Through the production process, we invited Chinese college students to participate in a series of surveys, interviews and mock video tests to get research data, which is related to the future analysis with KPIs of the general project. Outreach to Chinese colleges for collaboration will take place after the videos are done. This project will be the first sex education evaluation for Chinese college students if adopted by the universities. It will compensate the inefficient sex education in China and let more college students become aware of the importance of safe sex. This project has won the NYU Reynold's Changemaker Challenge and been reported in NYU Quarterly magazine.
Interactive Media Arts

Live Texture strives to explore the possibilities of data in art

STUDENT Yuxia Yao (Interactive Media Arts)
PROJECT TYPE Capstone Project
MENTOR Rune Madsen

Live Texture strives to explore the possibilities of data in art. Stored digitally, data can remain unaltered when converted into other digital forms. However, transforming data into analog forms bares inevitable information loss. When data are widely believed as true reflection of realities, one fact is being ignored that data cannot completely restore the facts. As data cannot take account all aspects of realities, representing an individual, a fact, or a place with numbers reduces dimensions in substance. Live Texture transforms data of birth and death into tangible fabrics, providing viewers with a close look at data-decoding process. In this way, the project intends to provoke viewers’ imagination on the information loss in the data-encoding process — in this case, the process of transforming from an individual’s birth and death to a number. In specific, Live Texture takes the form of a knitting machine. With the customized system visualized the real-time data of the worldwide birth and death, it knits the fabric accordingly. By presenting the demographical data as a visible and tangible textile, the project seeks to evoke viewers’ thoughts about the realities behind the numbers.
Interactive Media Arts

Winding Machine

STUDENT Yi Zhao (Interactive Media Arts)
PROJECT TYPE Capstone Project
MENTOR Roopa Vasudevan

Our lifestyle has been changing all the time. Urbanization keeps people inside concrete building most of the time, which limits the time and alters the way we interact with nature, including wind. We used to feel the wind, hear the wind and see the wind all the time but seeing becomes the most accessible way for urbanites nowadays. The visual perception is also a very interesting way because actually, we don't see wind directly. Instead, we see it through other mediators like trees swaying and flags waving. In addition to the content, the way we see the wind is also worth thinking. The physical world is projected into our eyes as a two-dimensional image, which diminish the wind in the direction perpendicular to our eyes. In order to reveal the beauty of wind by capturing wind itself visually in a comprehensive way, I propose a poetic installation named Winding Machine.

Winding Machine is a real-time wind visualization installation utilizing water and paint, in the form of a vending machine. The installation uses water to represent the atmosphere and paint to make the flow visible. Audience can save the representation of wind by marbling.
The uncertainty of death, other than its inevitability, naturally draws people to question the role death plays in their lives. Because the physical decay of the body cannot be denied, strictly binding a person’s being to the physical is a devastating thought, as it would mean the conscious ceases to exist as the cells eventually wither away. To cope, many cultures tap into metaphysics, and separate the conscious from their body, granting themselves an extension of their lives through a belief in the afterlife. To address this phenomenon, this project takes the player through death as imagined by Korean oral traditions and mythologies. By providing a modern interpretation of the ‘Korean afterlife’ in virtual reality, this project allows users to experience Korean thought and culture in an immersive way.
Anxiety, as a standalone condition or a part of one’s bigger mental health condition, is one of the most prevalent mental disorders amongst children and adolescence. World Health Organization (WHO) estimated that globally, at least one in 13 people struggles with some forms of anxiety disorder.

In coping with anxiety, there are a number of coping strategies that one can employ. Psychotherapy, pharmacotherapy, meditations and mindfulness exercises are some of the coping strategies available at the sufferers’ disposal. However, with the advent of technology, not only are these coping tools more accessible than ever, they also now come in many forms and medium, be it as a game or a meditation guide. A Walk in the Park (AWP), a virtual reality experience I seek to complete in my final semester of university, hopes to provide yet another avenue to help alleviate anxiety in those who are yet to feel completely comfortable with meditation or mindfulness exercises. Those who prefer visual guides, calming aural feedback or light movements are hoped to benefit from AWP. AWP utilises Emotiv EPOC headset to measure the user’s brain waves. When the measurement reads that the user is calm, the colour of the all-white virtual flower garden will fade in. When the user enters the VR environment, the user will be presented with an all-white flower garden with the background sounds of calming nature sounds, such as chirping birds. There will be a button that the user can click in order to activate the audio breathing guide. I hope to provide at least 4 audio guides of varying length (5 minutes, 10 minutes, 15 minutes, and 20 minutes). The script of the guides will be based on the audio meditation guides available online from University of California San Diego’s Center for Mindfulness and University of California in Los Angeles’ Mindful Awareness Research Center. As the user follows along the meditation guide and feels calmer, Emotiv EPOC will register the user’s calmer brain waves. When this takes place, the user will see that the colour of the garden around them will fade in. By showing a positive feedback of being calm, i.e. the colour of the garden fading in, it is hoped that this will further prompt both calm feelings and motivation to become calm.

It is hoped that through AWP, the user will feel calmer and more peaceful compared to before entering the VR environment. Although AWP does not seek to replace therapy, I hope that the therapeutic quality of calm breathing and meditations that AWP environment has will help users feel less anxious in the short, if not long, run.
Interactive Media Arts

Recalibrating Accents

STUDENT Kate Thoma-Hilliard (Interactive Media Arts)
PROJECT TYPE Capstone Project
MENTOR Roopa Vasudevan

With the increased pace of globalization and migration accents are less of a rarity. Regardless of who you think has an accent the truth is everyone has one. In linguistic terms this is called your idiolect, it is specific to you, everyone’s is unique even twins. Some people’s accents are more distinct than others; occasionally they can hint at which social class, country, region, or even city you are from. However, this can be misleading as accents are non-formulaic. Despite this it is impossible to ignore the fact that some accents are treated differently than others. Accents are stigmatized and difficult to hide. Naturally produced, most people have little control over them. There is very little science to explain them, but just by walking into a language class it is obvious that students are developing their own accent independent of instruction. This project aims at exploring what is happening acoustically when you speak English. Aside from some lexical differences English speakers are mutually intelligible even if they are from different places. This is because accents are merely filters on the standard pronunciation of the language. They change how others will perceive your speech and by extension you, but not the meaning. This project will use the international phonetic alphabet (IPA), an alphabet where each character has an assigned sound, to understand accents.
Interactive Media Arts

[SUCKERS] is a Mixed Reality docu-fiction series that investigates the lives of Vampires living in Shanghai

STUDENT Hilary Kadallah Burrowes (Interactive Media Arts)
PROJECT TYPE Capstone Project
MENTOR Roopa Vasudevan

[SUCKERS] is a Mixed Reality docu-fiction series that investigates the lives of Vampires living in Shanghai. Through a mixture of semi-directed interviews, written short stories, and completely unscripted conversations, [SUCKERS] aims to learn about what it’s like to be a human being living in one of the world’s most bustling cities while the world itself seems to be going through an identity crisis.

This project continues to investigate questions raised during my post-sophomore year DURF research on Narrative Techniques in Virtual Reality. While both projects aimed to learn best practices for telling stories in this emerging field, while the DURF focused primarily on “fabricated realities,” or stories told in worlds created in game engines using computer generated images, this capstone will look at immersive narrative techniques while making use of “reality capture” technologies (primarily 360 cameras). As for the actual experience of viewing the project, [SUCKERS] attempts to further investigate the concept of "hyper-reality" by forcing users into the real world in order to engage with the content. In order to view episodes, users are required to scan QR codes featured on posters "hidden" around Shanghai, specifically in places where individual episodes were filmed.
Special Program
The Map as Art
Exhibition of the *Printmaking in an Expanded Field* class
3rd Floor outside the Auditorium

The Map as Art is an exhibition of artworks from Assistant Professor Monika Lin's printmaking class. Students from the printmaking class expand on the notions and methodology of mapping to include conceptual and abstract representations of such things as psychology, memory, place, the body, and current events.
Image · Imagination
Exhibition of the *Introduction to Photography* class
3rd Floor outside the Auditorium

Image · Imagination — an exhibition of artworks from Professor Barbara Edelstein and Professor Jian-Jun Zhang’s *Introduction to Photography* class. The students will present photography artworks and videos from the semester.
Performing Arts

Auditorium

2:00-2:15 PM NYU Shanghai Chamber Ensemble
- Two Pieces for Clarinet and String Quartet
  · Goldfish Princess
  · Life’s Merry-Go-Round
  Hisaishi Joe
  Arr. Yue Cheng

- Double Concerto for Alto Recorder and Strings, BWV.1043
  Clarinet: Vera Zhong / Shiny Wu; Violin: Adele Kramer;
  Viola: Jennifer Tao; Cello: Weichen Pan (Guest)
  J. S. Bach
  Arr. Y. Cheng

- Sextet for Two Clarinets, Recorder and Strings
  "Blossom Nights, a Chinese Folk Song"
  Traditional
  Arr. Y. Cheng

2:15-2:30 PM Piano Solo (From the Studio of Meiling Chen)
- Nora Yang, Waltz in E minor, B.56 (F. Chopin)
- Ran Chen, Danse de la Fee-Dragee, Marche from The
  Nutcracker (suite), Op.71a (P. Tchaikovsky,

- Amanda Gao, Liszt concert etude, No.3

2:30-2:40 PM Chorale (Chorale Director: Jie Wang)
- Man in the Mirror

3:00 PM NYU Shanghai Alma Mater
NYU Shanghai Alma Mater 上海纽约大学校歌

We have come to stand together, soon we’ll part our separate ways, But we leave behind a legacy to light another’s way.

We will build on our foundation, cross the mountains and the seas, Giving rise to strength in unity for all the world to see, Giving rise to strength in unity for all the world to see.

We are Shanghai, we’re the city of lights. We are Shanghai, and the future is bright. We’re chasing horizons, dispel the dark give rise to Brightness and love for all lands. The world is not too big for us to be friends.

我们来自五湖四海怀抱热诚理想
求索新知收获灼见准备好扬帆起航

以天下为己任以世界为课堂
我们点亮盏盏微光照亮彼此方向
我们点亮盏盏微光照亮前行方向

We are Shanghai, we’re the city of lights. We are Shanghai, and the future is bright. We’re chasing horizons, dispel the dark give rise to Brightness and love for all lands. The world is not too big for us to live...

We’ve opened up our minds, we’re reaching for the skies. We’re united together, we breathe as one. Bridging our nations, the best is yet to come.

We are Shanghai, we’re the city of lights. We are Shanghai, and the future is bright.

The future’s in Shanghai, 这城市流光溢彩
We are Shanghai, 下一站何其精彩
We’re chasing horizons, dispel the dark give rise to Brightness and love for all lands.
听世界在召唤，未来由你我涂彩
边憧憬边勇敢

The world is not too big, For all of us to sing. The world is not too big for us To live with open minds, To live with open hearts, We’re reaching for the sky, We are Shanghai.