Undergraduate Research Symposium

FALL 2022

NYU SHANGHAI
上海 纽约大学

ABOUT

The NYU Shanghai Undergraduate Research Symposium is a university-wide celebration of research which showcases work from undergraduates spanning Arts and Sciences, Business, and Computer Science, Data Science, and Engineering. The Symposium features recently completed projects by Major Honors students, as well as research papers and creative work by students for their Capstone Projects, Independent Study Courses and as part of the Dean's Undergraduate Research Fund (DURF).

Visitors will have the opportunity to cast a vote for the projects that most impress them, and a panel of NYU Shanghai faculty will select the winning projects.

OVERVIEW

FLOOR PLAN

209
LIBERAL ARTS
& BUSINESS
PRESENTATIONS

LIBERAL ARTS & BUSINESS POSTERS

STEM & MEDIA POSTERS

204
STEM & MEDIA
PRESENTATIONS

CAFÉ
10TH
ANNIVERSARY
RETROSPECTIVE

09:00 - 10:00 AM *Presentations*

Liberal Arts & Business in Room 209
STEM & Media in Room 204

10:15 - 11:15 AM *Q&A session*

11:30 - 11:45 AM *Awards Ceremony in 2nd floor café*

LIBERAL ARTS & BUSINESS

Business

Economics

Humanities

Interdisciplinary

Social Science

The Impact of the Popularity of Tourism Videos on China's Post-pandemic Tourism Revitalization

GE, RUIQI; LIU, JIAQI

AREA: BUSINESS

MENTOR: ZHANG, JIDING

Due to the restriction on travel in the pandemic era in China, there has been a boom in e-travel on social media such as Bilibili. Many uploaders post vlogs of tourist attractions which attract plenty of viewers. In this project, we want to see whether these tourism videos will promote the revitalization of Chinese tourism in the post-pandemic or not.

Do these viewers take tourism videos as travel complements or substitutes? In particular, we focus on the differences between affiliated uploaders and independent uploaders, and try to distinguish their different impact on viewers' travel decisions.

A Game Theoretic Approach to Understanding the Cooperative Mechanism of the Chinese Community-based Elderly Care

GE, YILIANG; LIU, YUHAN; ZHENG, YAWEN

AREA: ECONOMICS

MENTOR: XU, NAN

By on testing the supply market of community elderly care services in Shanghai under the framework of Mixed Game, this study analyzes the game mechanism between NPOs and social enterprises in the process of providing elderly care services and provides potential feasible ways for the government to encourage cooperation between the two sides.

That is, NPO and social enterprises can achieve the greatest possible cooperation through moderate government funding under the condition of similar expertise.

Factors Influenced Toilet Paper Buying Behavior during The COVID-19 Pandemic, March to June 2020

ZHANG, YIJUN

AREA: ECONOMICS

MENTOR: JIN, YE

During the COVID-19 pandemic, American society witnessed consumers stockpile toilet paper. As such stockpile also happens in other crises, researchers are interested in the reasons behind. In this study, we examine three hypotheses for toilet paper stockpile behaviors: (1) increased demand; (2) information indirectly related to panic buying: COVID severity and habits; (3) information directly related to panic buying. We used New York and New Jersey from March to June in 2020 as our context and collected 248 households' buying behaviors before and during this period. Our findings show all three factors above help explain consumers' hoarding behaviors, even when using two different dependent variables.

Post-Conflict Narratives in the Basque Country: Separatism and Nationalism Through the Lens of Mass Literature

PERCHATKIN, ALEX

AREA: HUMANITIES

MENTOR: KENDRICK, ANNA

This research project examines the role of post-conflict reconciliation in the popular novel “Homeland” by Fernando Aramburu. The Basque separatist conflict of the 1980-2010s frames became one of those events that serve as a basis for a considerable number of fiction and non-fiction works, while Homeland was not only popular among sophisticated critics but the general audience (the HBO show was based on this novel). By studying this novel, this project offers a deeper understanding of the mass literature notion, and a new conceptualization of the Basque conflict, focusing on the nationalism and separatism terms in the literary fictional work.

Identifying the Relationship Between Economic Conditions and Entertainment Choices

CHEN, YUMENG; LU, SHAN

AREA: INTERDISCIPLINARY

MENTOR: ISHIHARA, MASAKAZU

Why do people sometimes prefer relaxing country music, whereas at other times they are more open to heavy metal songs? Previous literature shows that people's entertainment choices are sensitive to macroeconomic trends; they tend to purchase lighter cultural products during recession periods and switch to heavier ones during booms.

By analyzing people's entertainment choices in the music and movie industries, we found a negative relationship between economic conditions and the valence of the products consumed, which supports the "mood management" theory. Our study is the first to examine how changes in economic conditions affect entertainment choices with a weekly measure.

How Sexual Minority Men Should Plan "Coming Out": Lessons from Straight People's Reactions

HUANG, XIAOYU

AREA: SOCIAL SCIENCE

MENTOR: LI, GU

This project studied Chinese heterosexual adults' reactions to a sexual minority adult man disclosing his sexual orientation ("coming out") with various strategies. A survey was conducted on a sample size of 500 Chinese cisgender heterosexual adult participants' perception of 32 potential "coming out" strategies that may be used by sexual minority men and their experience where a sexual minority man "came out" to them. The findings will identify "coming out" strategies that are best received by heterosexual people in China, which will inform those who decide to "come out."

Community Management Under Shanghai Covid Lockdown

CAO, YUQIAN; TANG, JIAPENG; XU, ZIHAN

AREA: SOCIAL SCIENCE

MENTOR: GUAN, CHENGHE

In this project, we aimed to have a deeper understanding of the topic "Community Management under Shanghai COVID lockdown", and tried to provide some suggestions for post-pandemic urban planning in the future. We identified a newly formed system where residents voluntarily cooperated with the neighborhood community to take charge of the neighborhood, including organizing PCR test, providing channels to buy food, distributing food and helping elderly residents. We used methods including interviews with 30 Group Buying Leaders/ volunteers and an online survey with 200 participants, and got a thorough picture of the neighborhood management conditions of different kinds of neighborhoods.

Behind the High Admission Rates to Elite Universities Insight into the Influence of “Super High Schools” on Students’ College Outcomes

WU, SIYAO; ZHANG, YAQI

AREA: SOCIAL SCIENCE

MENTOR: WU, XIAOGANG

In the context of the current educational system in China, this study investigates how “super high schools,” a particular type of Chinese high school, influence their students’ all-around performance in college and in the long run by conducting interviews and quantitative data analysis.

This study concludes that although super high schools get a high college admission rate and help to promote social mobility in a general sense, they have a negative impact on the student's college performance and long-term development.

What is a Neighborhood? —Redefine the Sociological Concept of Neighborhood via Mental Mapping

ZHA, YUHONG

AREA: SOCIAL SCIENCE

MENTOR: LI, ANGRAN

The neighborhood effect has been widely examined in sociological research, yet current studies still haven't reached a consensus on its conceptualization. This study argues that the existing conceptualization of a neighborhood in most quantitative studies simply relies on its administrative definition but overlooks how local residents perceive the boundary of their neighborhoods and how their daily interaction matters for their understanding of neighborhoods. This study collects nuanced data based on mental mapping exercises and interviews, emphasizing the role of mental mapping in defining neighborhoods and identifying the social mechanism of how people's perception of neighborhoods impacts the definition of neighborhoods in Chinese contexts, therefore contributing to the studies on neighborhood effect.

STEM & MEDIA

Computer Science

Data Science

Interactive Media Arts

Interactive Media & Business

Mathematics

Neural Science

Self-Supervised Visual Place Recognition by Mining Temporal and Feature Neighborhoods

LIU, XINHAO

AREA: COMPUTER SCIENCE

MENTOR: FENG, CHEN

Visual place recognition (VPR) using deep networks has achieved state-of-the-art performance. However, most of them require ground truth sensor poses to label each observation's spatial neighborhood for supervised learning. When such information is unavailable, temporal neighborhoods from a sequentially collected data stream could be exploited for self-supervised training.

Inspired by noisy label learning, we propose a novel self-supervised framework named TF-VPR that uses temporal neighborhoods and learnable feature neighborhoods to discover unknown spatial neighborhoods.

Trash or Treasure: How to Utilize Emojis in Social Media Sentiment Classification

CHEN, BALE

AREA: DATA SCIENCE

MENTOR: LAURIÈRE, MATHIEU

Social Media Sentiment Analysis (SMSA) has become a popular topic in Natural Language Processing, which can help monitor social trends and emotions. Besides, emojis have also been prevalent due to its efficiency in embedding emotional cues in written text, but treated as useless tokens to be cleaned out. Therefore, we probe into possible methodologies to include emojis in the SMSA process. Also, we investigated the emoji-compatibility of Transformer-based models. This study bridges the literature gap about encoding emojis with BERT-based encoders, strongly indicates that emojis improve the models' performance, and proposes a feasible and promising methodology for SMSA.

Qiantan Holomap

FAN, JIAYIN; ZHOU, JIACHEN

AREA: INTERACTIVE MEDIA ARTS

MENTOR: GODOY, MARCELA

A hologram map enables users to have a more intuitive sense of their current position. Unlike the conventional print-out map or GPS navigation map apps, a hologram map would be a detailed portrait of the new campus and every user could redesign the layout by controlling it with gestures. Qiantan Holomap is s gesture-controlled 3D Hologram map for NYU Shanghai's new Qiantan Campus.

It uses the leap motion sensor as its input, allowing users to use left-hand gestures to navigate through different floor maps at the new campus. Meanwhile, the right hand enables users to choose freely between 12 floors and reset the scene position in case the picture is out of the scene. The work is considered a functional physical installation serving the NYU community, which later will be donated to NYU Shanghai.

Realtime AR Performance Enhancement

GUO, YUANHE; YU, MORUI

AREA: INTERACTIVE MEDIA ARTS

MENTOR: GODOY, MARCELA

This project is a live performance enhancement using augmented reality technology. We use Blender for 3D modeling, OpenCV-python for camera pose estimation, and Touchdesigner for real-time rendering. No extra hardware is required except for cameras and a pc or a mac. Visual effects we made are affected by the elements of the music, and their positions are matched with the real scene. They are placed over the input video stream and can be streamed onto any display. With our performance enhancement, audiences can enjoy a more immersive experience in places like the school auditorium.

Estrangement and Imagination: Urban Memory of Home

XIAO, JINGCHEN; YAN, ZIQI; ZHANG, DEYIN

AREA: INTERACTIVE MEDIA ARTS

MENTOR: PAN, WEIXIAN

Ushering in a pandemic era with regional wars breaking out, never has our future been more unpredictable, nor has the meaning of home been more vital. The project, started by three Beijing girls traveling and living across borders, hopes to shed light on a new understanding of what it means to be elsewhere and what it means to be at home.

It might come from memories of the past or imagination, a mismatch between the ideal and reality ... To find out the answers, in this piece, we present a documentary and a collaborative project revolving around Beijing.

Map-Based Interactive Interfaces for Locating, Finding, And Rescuing Homeless Animals in Urban Areas

LIANG, JIAYI; WANG, JIYAN

AREA: INTERACTIVE MEDIA AND BUSINESS

MENTOR: YUAN, YANYUE

Regarding the issue of urban homeless animals, our research investigates people's communications and interactions in terms of posting homeless pets online. Meanwhile, we are proposing an application interface designed for individuals and animal shelters who wish to provide humanitarian assistance to homeless dogs and cats through communicating with each other, by uploading and posting information about homeless animals in real life. This application interface connects users with homeless animals information they post to form a community of homeless pet lovers. We also believe that the application interface will facilitate users to rescue and adopt homeless animals and will also be beneficial for establishing public awareness on animal protection.

Diffusivity of a Particle Subject to Dry Friction with Random Noise

XU, CARL

AREA: MATHEMATICS

MENTOR: MERTZ, LAURENT

In our research, we focus on an object subject to dry friction and Gaussian noise. We look for an identical, independent pattern, which we call “excursion,” in order to reveal the object’s diffusivity and mobility. More specifically, we look at the dynamics in a “long excursion,” in which the behavior of the entire system is encoded.

Our research is devoted to giving rigorous and simple formulae for the diffusivity and the mobility, as well as obtaining clear relations between the type/power of noise and the diffusivity of the system.

Agency Attribution in Speech as Causal Inference

XIAO, SHUYING

AREA: NEURAL SCIENCE

MENTOR: TIAN, XING

In previous studies, it has been proposed that this causal inference process is implemented using a bayesian decision model. In this model, the probability of a cause given a certain observation can be calculated by Bayes' rule, using the likelihood and prior probability.

Therefore, the central question that we aim to answer is whether humans are able to distinguish between internal uncertainties and external perturbation during speech production, given this mechanism of Bayesian inference.

JUDGES

Rodolfo Cossovich

Assistant Arts Professor of IMA

Ilaf Elard

Assistant Professor of Practice in Economics

Anna Hopper

Assistant Professor of Practice in IMB and Social Sciences

JUDGES

Mathieu Laurière

Assistant Professor of Mathematics and Data Science

Olivier Marin

Associate Dean of Arts and Sciences, Professor of Practice in Computer Science

Jia Miao

Assistant Professor of Sociology

AWARDS

LIBERAL ARTS & BUSINESS:

- BEST PRESENTATION
- BEST RESEARCH PROJECT

STEM & MEDIA:

- BEST PRESENTATION
- BEST RESEARCH PROJECT

MOST POPULAR PROJECT

Vote for your favorite project(s)!

The best way to get a good idea is to get a lot of ideas. Redeem any experience: get something out of whatever it is you are doing (or what you are forced to do).

—Angelina Zhou ’22
Most Popular Project, Spring 2021

Don’t be afraid of new concepts. Have patience and really dig into it word by word.

—Hongquan Liu ’23
Best Research Project in Math and Science, Fall 2020

As long as you have some ideas for a research project, reach out, apply to funding, and give it a try. NYUSH has many resources that can give you the freedom to explore your intellectual interests. Once you start your project, push it to your limit.

—Ellen (Yurun) Ying '21
Best Research Project in Liberal Arts & Business, Fall 2020

The most meaningful part of research is the process of learning skills rather than merely the experiment outcomes.

—Jialin Wang '23
Best Research Project in STEM and Media, Fall 2021

I chose only based on if I will be doing work that interest me. Not based on which professor will be my advisor, the research topic, or who I'll be working with.

—Masaki Kagesawa '20
Best Project, Spring 2020

I would recommend thinking outside the box and not limiting your research questions or methods to one field. Addressing interdisciplinary questions and combining knowledge from different areas has brought me a lot of insights and fun!

—Yumeng Chen '23
Most Popular Project, Fall 2021

Do not pass up the opportunity to pursue undergraduate research! Research skills are completely transferrable and you will be tasked with using critical thinking, concision, reasoning, analytical thinking, and referencing in most work that you do.

—Taylah Bland '22
Most Popular Project, Spring 2021

Explore to the fullest and have fun!

—Yuchen Zhou '23
Best Research Project in STEM and Media, Fall 2021

It is more often than not that you are uncertain about what you really want to discover. It's normal. Just find an interesting topic and get your hands dirty.

—Xinhao Liu '23
Best Research Project in Math and Science, Fall 2020

Be open, think of the big picture, and don't set your eyes only on the low-hanging fruits.

—Qian Chu '22
Best Poster in Math and Science, Fall 2020

Think critically about your and other's research and always ask questions to yourself or others no matter how big or small they are.

—Muzi Andrew Du '21
Best Research Project in Math & Science, Spring 2021

I think the most important thing for any research is to conduct in depth literature review. This provides a solid structure for the entire research.
My advice would be to set a clear goal of perhaps reading one paper or so at a fixed time. For example read one paper over breakfast each day. Once accumulated it would be really rewarding!

—Brandon Lin '22
Best Presentation in Liberal Arts and Business, Fall 2021

I highly encourage all students, especially IMA folks, to participate in undergraduate research.
Things may start off vague sometimes, but it will all come together in the end! It is not only the outcome that matters, but also the process where you learn rapidly, think critically, and reflect constantly!

—Zeping Fei '20
Most Popular Project, Fall 2019

Ask more, watch more, do more,
and never be afraid to make mistakes.

—Xinying Zhang '18
Best Poster Presentation for Mathematics and Science, Spring 2018

Find your research interest! Talking to your professors helps a lot. Also, just try things around.
I found my experience at symposium meaningful not only because I received constructive feedback from professors, but it also felt rewarding when I "promoted" my findings to others.
Formally presenting my work was a great moment to make my thoughts (especially ideas about the research) more clear and organized!

—Leslie Sijia Huang '22
Best Research Project in Liberal Arts and Business, Fall 2021


Undergraduate Research Symposium
NYU SHANGHAI

上海纽约大学
NYU SHANGHAI
2012-2022

Undergraduate Research Symposium

NYU SHANGHAI