



SUMMER RESEARCH ACADEMIES

2021 Capstone Seminar Proceedings

2021 Capstone Seminar

List of talks

Understanding the Genetic Links Between Traumatic Brain Injuries, Microglia Activation, and Alzheimer's Disease

Anwita Satapathy, Emma Maria Podol, and Shreya Thota

Social Spending and Social Cohesion: A Closer Look Into the Welfare State's Effect on Attitudes Towards Migration

Kyle Anderson, Mihika Balaji, and Wendy Benitez Jaramillo

Saving Salmo Salar? A Deep Dive into Conservation Efforts of New England Atlantic Salmon

Abirami Valliammai Kathiresan, Katie Rueff, and Noramon Ransibrahmanakul

The Seeds of American Extremism: Right-Wing Propaganda, Misinformation, and Manipulation During the McCarthy and Trump Eras

Alejandra Ramos, Anandita Agarwal, and Rijuta Kalantre

SeaMorph: A Gesture Controlled Soft Robot for Collecting Fragile Marine Organisms

Allison Zhang, Finn Smith, and Maithili Kumar

ManeuVR: Using Simulated Perceptual Paradoxes to Increase the Mobility of Wheelchair Users

Kevin Tang and Nivedita Sanghavi

Applications of Convolutional Neural Networks in Chest X-Ray Analyses for the Detection of COVID-19

Anish Kasam, Kevin Lan, and Patrick Ting

Photometric Analysis Using Light Curve of Eclipsing Binary V* SW Lac

Gavin Hung, Jonathan Yen, and Richard Hoffmann

Doin' for the 'Gram: The Relationship Between Instagram and an Adolescent's Mental Wellbeing

Kayla Yee, Sofia Marie Hughes Trecenti, and Sydney Randolph

Development of a Neural Network for Diagnosing Early Onset of Multiple Sclerosis From Differentially Expressed RNA in Peripheral Blood Smears

Aditya Mittal and Larry Bermudez

The Influence of the American Media: Polarized Media Portrayal of Mexican-Americans and how it is Reflected in the Sentiments of Tweets Related to Them

Bradley Ayers, Cody Busch-Weiss, and Syona Bhandari

An Overlooked Controversy of British Imperialism: How Soil Erosion Defined Colonialism in Eastern and Southern Africa

Bryce Miller, Elise Chiu, and Yuna Choi

2021 Capstone Seminar

List of talks

Who Run the World, Girls!: How American Women's Responses to National Health Crises Advanced their Political Influence

Isabella Daly, Michelle Huo, and Simone Merani

Piano Press: A Cable-Actuated Glove for Assistive Piano Playing

Jaaron Leibson, Suhana Shrivastava, and Varun Pal

Without Waste: Immersive Simulation That Raises Awareness for Climate Change Through Mixed Reality

Alex Wang, Patrick Zhang, and Sanya Gupta

Comparing Binary Classification Algorithms through Classification of Exoplanets by Habitability

Aland Liu, Derek Cao, and Gohitha Venkluri

The Properties of HAT-P-11 b

Iori Adachi, Jack Carr, and Johnathan Zhang

Hey Alexa!: Attitudes Towards Domestic Artificial Intelligence and Robots

Ananya Parikh, Chenfei Wang, and Leo Rao

Developing Analogues of Anticholinergic Drugs for the Treatment of Asthma With Improved Efficacy

Bryant Wong, Cindy Li, and Sriya Sai Pushpa Datla

The Effect of Colonial Ties on Migration Narratives in American and British Media

Brooke Mahany, Gavin Lin, and Santiago Gomez

Making Medicine In Modern China: Herbs, Drugs, And Government

Irene Yuan, Timothy Chen, and Xiaoyun (Jasmine) Li

A Machine Learning Ensemble for the Early Detection of Diabetic Retinopathy

Arjun Chandra, Arnav Bhola, and Justin Liu

Visualizing the Helix Nebula Using Multi-Band Imaging

Aarsh Shroff, Amber A Atac, and Rakesh Mehta

This Is Personal, But...: The Relationship Between Self-Disclosure and Communication Technology

Grace Hahn, Matthew Barnett, and Melissa Lee

Flexi-Shunt: Designing a Fluid Actuated Hydrocephalus Smart Shunt That Mitigates Blockage and Infection

Hannah Moshtaghi, Siddharth Varman, and Tanush Paradeshi

2021 Capstone Seminar

List of talks

ARemember: Optimizing Unique AR Virtual Environment Creation Using Physical Surroundings and Atmospheric Adjustments

Aashna Gupta, Nick Choy, and Weston Keller

Century-Old Stereotypes: Contextualizing the Historical Presence of Yellow Peril and Origins of the Model Minority Myth and Its Influence on AAPI-hate in 2020

Khushi Kunjoor, Lesley Tan, and Safia Peer

Culture and Politics: How United States National Identity Has Shaped Healthcare Policy

Cara Hliboki, Julian Harrison, and Nathan Yang

The Impacts of Musical Training on Structure and Speech Processing in the Auditory Cortex in Early-trained vs. Late-trained Musicians

Akhil Rajidi, Alissa Pfeffer, and Harshi Saxena

American Media's Coverage of Immigration at the Southern Border Based on the Political Party of the Presidency

Agastya Jain, Pavithra Harsha, and Vishal Krishnaiah

Generating Musical Melodies Using Machine Learning

Yiran (Irene) Wang and Zachary Hoffman

The Light Curve of WASP-3b's Transit

Bishop Jackson, Medha Tambe, and Ron Alvarez

Are You Still Watching...?: The Impact of Binge-Watching Violent Television Shows on Young Adults' Emotions

Arushi Maheshwar, Jules Boehle, and Megan Wang

EarBloom: A Bio-Inspired Intersection of High Fidelity Hearing Protection and Fashion Technology

Bryan Mui, Kayla Youhanaie, and Tanya Vidhun

CovidWalk: Comparing Movement Difficulty and Stress Levels Before and After the COVID-19 to Better Understand Safety Precautions Amidst the Pandemic

Jason Xu, et al.

Populism in the Media: Analyzing the Motivations and Values Behind Anti-Vietnam War Protests and the Capitol Riot

Elizabeth Ludwig, Kevin Chan, and Srihitha Pallapothula

The Not So Green Costs of a Green Economy

Atharva Nigudkar and Yunhao Zhang

2021 Capstone Seminar

List of talks

A Comparative Analysis of the Emotion Recognition Ability of Patients With Post-Traumatic Stress Disorder and Patients With Alzheimer's Disease

Adam Vo, Dongyuan (Derek) Wu, and Ryan Jacob

How NY News Portrayal of Chinatown Changed During COVID-19

Anisa Majhi, Michael (Xander) Widener, and Siqi Fan

CAPTCHA Recognition With Convolutional and Parallel Neural Networks

Dylan Ong, Lily Collins, and Quincy Rosenzweig

Analyzing the Light Curves of Different Eclipsing Binaries

Ayush Guha and LingYi Tang

Texting, Calling, and Zooming, Oh My!: Young Adult's Communication Preferences During the COVID-19 Pandemic

Jamie McCoy, Yingyu Chen, and Yubin Zhang

HaptG: Design of a Wearable Haptic Device for Intuitive Navigation

Ayden Bitanga, Tanish Swarnapuri, and Wesley Maa

EnVRonmental Consciousness: An Analysis Through Virtual Reality — How Immersing Users in a Sustainable Virtual World can be Effective in Increasing Environmental Awareness

Anirav Sai Kareddy, Arnav Machavarapu, and Medha Mahanta

The Great (Un)Equalizer: Race and the Responses to Katrina and COVID-19

Levy Shaked, Malina Andrews, and Vaibhav Rangan

Evaluating the Effectiveness of Different Probiotics in Reducing Neuroinflammation Through Manipulation of M1/M2 Microglia Polarization

Aayush Vemuri, Akhil Rokkam, and Avinash Pandit

Melting the ICE: Analyzing the Change in American Perspectives of Immigration Enforcement From 2020–2021

Elle Horst, Evan Broccoli, and Jayna Dave

Big Tobacco vs the Public: How Grassroots Organizations and Experts Combat Corporate Marketing and Misinformation Globally

Allan Jiang, Om Taropawala, and Saiesha Bade

Behind the Button: Understanding Why We Follow Influencers on TikTok

Aditya Hariharan, Selina Wu, and Sukriti Singh

2021 Capstone Seminar

List of talks

Analyzing the Performance of Biologically Plausible Neural Networks

Leya Dereje and Nikhita Punati

Comparing the Properties of M83 and NGC 253 Using Multi-Band Imaging

Abby Geiger and Jessie Wang

ApiaCealution: A Celery-Inspired Smart Mask and Collar to Mitigate the Effects of Environmental Issues

Rhea Virk and Sameer Bajaj

NaVRgate - Expression Driven VR Environment Navigation

Andrew Song, Anthony Foo, and Shreyas Rana

From Newspapers to Twitter: Media's Changing Influence During the Influenza and COVID-19 Pandemics

Christina Gomez, Clark Wang, and Rachel Lei

Predictively Modelling Space Radiation-Induced Increases in Markers of Both Neuroinflammation and Cognitive Dysfunction

Dowson Yang, Eshaan Mistry, and Sid Udata

Effect of Income Level on Public Attitudes Towards Asylum Seekers and Refugees in the Contiguous USA

Julia Shang, Sarah Yun, and Shreya Thota

The Historical Analysis of Leadership Within Contemporary Anti-Vaccination Movements

Daniel Wu, Kendra Wagner, and Madhavi Karthik

Swipe Left or Right?: Perceptions of Online Dating Apps

Angela Du, Catherine Lin, and Riya Bhatla

Predicting COVID Cases: Effectiveness of the Vaccine

Alex Hellman, Derek Xu, and Ritesh Kasamsetty

Analyzing the Transit of HD 189733b

Richard Chen, Ria Jain, and Shagun Bothra

WearaBraille: A Wearable Soft Actuated Braille Translator

Alex Xu, Arjun Verma, and Siona Tagare

MorAR: Ethical Complications - The Action of Murder in VR

Christopher Mo, Sanjay Chandrasekar, and Sophia Liu

2021 Capstone Seminar

List of talks

Saving the Planet but Not Its People: Comparing the Negative Effects of Environmentalism on Ethnic Groups and Immigration in the United States During the Early 20th Century and the Present

Anastasia Zuromski and Dylan Taxer

Comparison of the Effects of Antihypertensive Drugs on Slowing Cognitive Decline for Alzheimer's Disease

Aliyah Oakley, Faith Ling, and Joseph Lee

The Enemy from Within: The Development of White Supremacy in the United States and its Consequences on American Politics

Jessie Goodman and Natalie DeLucchi

Comparison of Tabby's Star Light Curve

Canis Li, Sam Fatehmanesh, and Sophia Fu

The Geography of Partisanship: A Twitter Sentiment Analysis of American Senators' Attitudes Towards Immigration

Sophia Chen, Trent Chu, and Varun Fuloria

SmartTouch: The Everyday Vest That Uses Deep Pressure Stimulation to Calm the Sympathetic Nervous System in Children With Autism

Carson Phelps, Katherine Hellman, Justin Yu, and Lauren Finkel

I "Liked" That Offline Too!: The Relationship Between Emotional Intelligence and Positive Media Interactions on Social Media

Matthew Fok, Mia Zhang, and Veda Srinivasan

An Environmental Look into Anti-Pacific Islander Sentiment: Climate Change's Effects on the Maori People

Maya Chera, Meghaa Ravichandran, and Nithika Karthikeyan

VRmerce: Online Shopping App That Emulates in-Person Shopping Experience Through Virtual Reality

Anish Jain, Sheryl Chen, and Sidarth Raman

Effective Chatbots using Machine Learning and Natural Language Processing

John Ivanov, Prajval Sharma, and Yarwin Liu

A Comparative Study of the Most Effective Source of Mesenchymal Stem Cells as a Curative Treatment for Multiple Sclerosis

Neetika Mishra, Paayal Khabiya, and Srutilaya Mani

The Never-Ending Fight: Media's Multi-Faceted Role in Civil Rights Activism

Bella Lee, Camila Mikaela Ortiz, and Sean Tang

2021 Capstone Seminar

List of talks

Mapping Hydrogen Gas Around the Helix Nebula

Aritro Datta, Komal Kaur, and Paola Hoffman

Victims or Intruders?: A Comparison of Climate-Induced Migrants' and Asylum Seekers' Portrayal in American News Media

Hannah Qin, Kelly Mou, and Prarthan Ghosh

Military Mind: Simulations That Test How Willing Users Are to Create Violence in an Augmented Reality Environment

Aarav Navani, Ryan Jain, and Srihari Krishnaswamy

Why Isn't Your Camera On?: The Link Between Social Anxiety and Distance Learning During the COVID-19 Pandemic

Christopher Chou, Isabela Contreras, and Tanvi Chichili

"Kung Flu": The Intersection of Disease and Anti-Asian Sentiment During COVID-19

Melody Lin, Rachel Lee, and Shruti Mahesh

Fire Detection Using Image Processing and Deep Learning

Nikhil Gupta, Rohil Kalra, and Saahas Kohli