

Summer Research Academies

Summer Sessions

2023 Capstone Seminar

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Thursday, July 27

Autism in Adolescents: Linking Social Interactivity Symptoms to Brain Connectivity

Ansh Ambatkar, Ailian Guo, and Oshin Rex

A Comparative Analysis of Supervised and Semi-Supervised Learning Models for Malaria Classification Using Explainable AI Techniques

Aryan Agrawal, Conrad Hsu, and Stephen Tan

Raman Spectroscopy for Identification of Monolayer 2D-Materials

Jaden Elliston, Akshaya Jayaprakash, and Andrew Li

Age-Dependent Effects of Binge Drinking on Anxiety and Expression of mGlu1

Meghana Babu, Sareena Garg, and Qi Xu

Anxiety, Depression, and their Effect on the Limbic System in Autistic and Neurotypical Adolescents

Ryan Huang, Ayaan Khan, and Abhiram Upendram

Early Lung Cancer Classification With Convolutional Neural Networks in Computed Tomography Scans

Dhruv Hebbar, Manu (Joshua) Li, and Claire Lin

Demonstration of an Ultra-fast Graphene Photodetector

Onuva Ekram and Shengchen Guan

Binge-drinking and Alzheimer's Disease Protein Markers: The Intersection of Age, Sex, and Alcohol

Sneha Jiju, Zoe Lin, and Mazzi Moore

The Battle Against Homogenization: Queer Villains in Helluva Boss

Ezri Adelsbach, Yuanrong Li, and Felicity Wong

Life Beyond: Search for Exoplanets and Extraterrestrial Life

Justin Tsai, Yuanshuo (Simon) Zhang, and Jiemeng Zhu

Evaluating Environmental Justice: How Federal Courts Overlook the Effects of Environmental Policy on

Communities of Color

Arya Rawal, Emily Tan, and Jerry Yang

Hear Me Out: The Correlation Between Hearing Ability and Stress-Related Health Outcomes

Brennan Chu, Derek Kim, and Jaewook Kim

Skip to the Good Part: Music Culture in the Age of Short-Form Social Media Algorithms

Charlotte Ho, Gabriel Thompson, and Catherine Yao

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"The Bird Has Expired": Exploring the Historical Significance of the Seasat Mission, 1957-1992 Ava Canfield, Eugene Leung, and Valerie Ta

Weighing the Effect of Legal Precedent on Recent Supreme Court Rulings Regarding Gun Rights for Domestic Abusers

Cindy Carbajal and Aditi Shanbhag

The Impact of Discrimination on Trust in Vaccine Safety and the COVID-19 Vaccine Uptake Vaishali Jha, Suo Qin, and Siyue Zhu

Bot-Driven Misinformation Online: The Effects of Moral Language and Credibility on Information Diffusion Lindsey Jiang, Maya Lenkov, and Zhenzhong Yuan

Autism Identity: An Examination on Late Diagnosis and Self-Esteem of Women Elise Maliya Meza and Mitzi I. Ojendis Hernandez

Automated Analysis of Retinopathy From Fundus Scans Using a Convolutional Neural Network Saanvi Kotha, Jason Zhou, and Ryan Zhou

Cardiac Health Prediction From Micromechanical Measurements

Ansh Bhatia, Eddie Ni, and Cayden Jun Jei Tu

From Jordan Belfort to Juice WRLD: Drug Use on Screen, Racial Stigma, and Theories of Taste Daniel Chu and Jiarong Xie

Design and Analysis of Graphene Photodetector

Yuzhou Ai, Nicholas Xu, and ZiRui Yu

The Impact of Psychological States on Moral Expressions: Analyzing Relationships Between Mental Health and Moral Language in Suicide Notes

Rishitha Adusumilli, Joy Chu, and Hannah Lee

Analysis of First-Generation Antipsychotic Drug Groups in Reducing the Positive Symptoms of Schizophrenia in American Veterans

Isabella Choi, Candice Lin, and Aditi Vaduri

Enhancing Automated and Early Detection of Alzheimer's Disease Using Out-Of-Distribution Detection Audrey Paleczny, Shubham Parab, and Maxwell Zhang

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Gendering Well-Being: Prescriptive Normalcy in Rexulti's "Progressive" Antidepressant Commercials Ameera Galeeb, Chloe Kim, and Ekaterina Linger Kumar

Strain Engineering for Site-Specific Creation of Quantum Emitters in WSe2 Abhi Nathan, Nathaniel J. Hadsall, and Leon Hegelich

Binding Intuitions in Terrorism: A Comparative Analysis of Moral Foundations in Terrorist Manifestos and Media Reportage

Emerson C. Chang, Qiyuan Gu, and Sophia Li

Autism in Television: Exploring Representation and Stigmatization of Individuals with Autism Noopur Garg, Samantha Kim, and Claire Shen

Towards Earlier Detection of Oral Diseases On Smartphones Using Oral and Dental RGB Images Ayush Garg, Julia Lu, and Anika Maji

Influence of Stress on Context-Dependent Decision Making

Spencer Fang, Grayson Kang, and Aarushi Mupparti

Examining Audience Reactions to Race Swapping in Narratives: A Moral Foundations Perspective Stephanie Leon, Tanvi Munjeti, and Rohan Shah

The Role of Racial Identity Among Non-Citizen Immigrants in Healthcare Access and Efficiency Avni Gulrajani, Kathy Wang, and Kimberly Yang

Secret Shuttle Schemes: The Military-NASA Partnership and the Development of the Space Shuttle Abstract Bridget Gale and Haolan (Matteo) Yu

From Precedent to Present: Defining the Deviations of Affirmative Action in College Admissions within Individual Cases

Arsh Shah, Lilly Wu, and Eileen Zhu

Predicting Remaining Useful Life In Jet Engines Using Machine Learning

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Anna Luo, Kathryn Elizabeth Ready, and Shaoshao Tang

"Tiger Parenting": Investigating the Prevalence and Cultural Evolution of Corporal Punishment Beliefs in Asian Households Within the U.S.

Lina M. Nguyen, Trang T. Phan, and Maggie Hei Yu Zeng

Astronaut or AstroNOT: How Societal Pressure Influenced NASA to Change Astronaut Selection From the 1950s-90s

Nistha Nath, Fiona Lauren Pauli, and Anne Takahashi Thomas

Un-Equal Protection Clause: Confronting the Influence of Recent Supreme Court Decisions on Undocumented Immigrants Access to Citizenship in the United States

Aadya Batra, Katelyn Conejo, and Sophia Vannucci

Quantifying Composite Damage using Machine Learning

Nihar Donthireddy, Sahil Singamsetty, and Kovidh Singh

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Evelina Cheng, Sheryl (Lanxuan) Xia, and Jialu Xu

The Subtle Undertones of Cultural Assimilation: How does American Culture Lead to Higher Rates of Self-Reported Distress Among Hispanic Communities?

Alexandra (Ally) Hatakeyama, Hanna Nungaray, and Xirong Zhang

The Hidden Space Races: Ideological Motives for Space Exploration in the US, 1950-1970

Alexis Bravo-Lagunas, Cash Carrillo, and Turner Daudert

High-Thoughput Prediction of Elastic Modulus

Bryan Chen, Mira Krishnaiah, and Maximus Ren

Photoluminescence Spectroscopy of Excitons in Monolayer WSe2

Eden Lyu, Alexander Ta, and Brianna Zheng

Case by Case: Exploring the Evolving Supreme Court Interpretations of the National Environmental Policy Act

Rajorshi Chatterjee, Kavya Peela, and Caroline Yuan

Call of Duty: How Toxicity Continuously Poisons the Minds of its Players

Miles Lee, Skylar Leung, and Jocelyne Lioe

You Can't Spell Healthcare Without THC: Exploring Differences in Men's Marijuana Consumption and Smoking by Race and Citizenship Status in California

Akshar Miriyala, Siddanth Nandivada, and Jiashu Zhou

Budget, Time, Precision, and Culture: How NASA Engineers Built the Hubble Space Telescope and Its Widespread Effect, 1978-1990s

Kexing (Ariana) Li, Sneha Ramanuja, and Franklin Yang

Predicting Fatigue Crack Growth in Aluminum Lap Joints

Hannah Park, Shashwath Senthil, and Jonathan Wang

Physical Insights into Raman Signatures of Graphene

Shaumik Kalwit, Isaac Tsai, and Lionel Yan

Criminalizing Choice: Deconstructing Competing Constitutional Interpretations in Supreme Court Abortion Cases

Kate Hilleboe, Ella Kapadia, and Eleanor Yu

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Privileged Pounds: Health Disparities Among Overweight Americans Across Socioeconomic Statuses Quinn Cook, Noel Kim, and Lucas Wu

Struggles After Success: The Relationship Between NASA and Public and Governmental Perception, from Apollo 11 to the 1990s

Zhihao Chen and Ashley Sang

Reducing Repetitive Behaviors in BTBR Mice using 5-HT6 Antagonist SB-399885

Liuqing (Nina) Chen, Ly Yen Anna Nguyen, and Mihir Rane

The Influence of Childhood on Morality in Adulthood: Exploring the Relationship between Upbringing, Moral Values and Political Affiliation

Jeffrey Gao, Dalton Guan, and Zhenhua Yuan

The Quest for Equality: How Originalism and Pragmatism Influence Supreme Court Rulings on Affirmative Action in Higher Education

Sean Kim, Nandana Sukumar, and Yixian (Mary) Zheng

Nonverbal Communication Differences in Autistic Individuals on a Neurological Level

Ethan Choi, Sreemayee Krishna, and Arushi Pandit

GU-Net: Diffuse Glioma Segmentation in Brain MRIs Using a Modified BU-Net under Data ConstraintsArnav Dhar, Caroline Hsu, and Snehil Kakani

Blastoff and Backfire: Environmental Impacts from Space Launches at Cape Canaveral, from 1960-2000

Aditya Kudaravalli, Sai Samhitha Pallapothula, Mia Reid, and Athreya Sriram

Analyzing Probabilistic Learning in Male and Female Autism Spectrum Disorder BTBR T + IF/J Rodent Model: Effects of 5-HT6R Treatments

Bryan Alexander Canales, Rosa Sahandi, and Jiamei (Amber) Wang

Extending Moral Foundations Theory: Unraveling the Foundation of Fairness in Political Decision-MakingPreston Bhat, Ronit Kapoor, and Sathvik Nookala

Conservatism in the Shadows: Examining the Shadow Docket's Covert Advancement of Conservative Agendas Alana Liu, Pritam Misri, and Maya Walsh

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Efficient Diagnosis of Osteosarcoma in Adolescents With Convolutional Neural Network for Histopathology Images Amy Li, Navya Rawal, and Aviva Wang

Two Spiders and a Monkey: The Challenges Women Faced in NASA, 1960-1989 Aahelie Bhattachayra, Richa Shukla, and Rithika Suresh

Agora vs. Echo Chamber: Online Social Networks and Group Moral Attitudes Kyle Costabile, David Ruat, and Aniket Shandilya

Binge Drinking and Cognition: Using Mice to Model Predictors of the Negative Effects of Alcohol Consumption on Memory

Helen DeSimone, Kiana Hinkson, and Eddie Ma

Demonstration of an Atomically Thin Transistors Enabled by Novel vdW Materials Lifantao (Teddy) He, Amanda Liu, and Emily Luo

Fluency and Frustration: How Language Barriers Compound Health Disparities Among Non-Proficient English Speakers in California

Austin Meng, Nessa Pan, and Cecilia Qian

Progressive or Regressive: Exploring SKIMS's Marketing Tactics and its Alleged "Inclusivity"

Miriam Galatzan, Stephania Lupian Moreno, and Alondra Ramos Covarrubias

Cracking the Code: Predicting the Remaining Useful Life of Lithium Ion Batteries

Xinran Chen, Aneesh Ganti, and Shane Matsumura

Automated and Cost-Effective Pneumonia Detection Using Deep Convolutional Neural Networks in Chest X-Rays Ethan Chen, Arin Kadakia, and Suhaas Surapaneni

Investigating the Ethanol-Induced Changes and the Sex- And Age-Dependent Differences in Ionotropic Glutamate Receptor Subunit Expression Using the Drinking in the Dark Model in C57BL/6J Mice

Collin Jin, Dilan Setiya, and Zihan Zang

Room Temperature Observation of Single Photon Emission from Quantum Defects in Hexagonal Boron Nitride Sihan Cheng, Ethan Huang, and Ryan Luo Li

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Queering the Multiverse: How Everything Everywhere All At Once Displays and Challenges Normative Chinese Ideals

Madison Nuwey and Alina Wang

Generating Synthetic Acoustic Emissions From Material Damage

Ethan Ransing, Jeia So, and Dohyun Yang

Advancing the Diagnosis of Acute Lymphoblastic Leukemia with Hybrid Neural Networks

Karma Luitel, Anika Ramanathan, and Meghana Somu

Effects of Nicotinic and Muscarinic Acetylcholine Receptor Modulation on Context-Dependent Decision Making Felix Gu, Reva Kasula, and Hannah Su

Modeling, Analysis, and Design of 2D-FETs for Future Transistor Technology

Steven Shangtong Ke, Hanbo Li, and Reece Liu

How Immigration Status and Education Affect Access to Dental and Health Insurance among Hispanic Adults in California

Daniela Jimenez, Natalie Martinez, and Olivia Vaca

Wired to Play: Investigating the Link Between Autism and the Development of Gaming Disorders in Adolescents Mariann Burgos-Ramirez, Emily Manuto, and Tarun Ramakrishnan

Estimating Satellite Flight Trajectories

Jasper Ng, Abhinav Shah, and Abigail Vogel

Discrimination and Disparities: Examining the Influence of the Supreme Court on the Jury Selection Process Through Peremptory Challenges

Antonio Lux, Alexander Hsieh Tung, and Jessica Wang

Behind the Fervor for "Ski-Slope" Noses: An Exploration into the Surgical Reinforcement of Colonial Beauty Rishab Jain, Shaoyi Lin, and Ashwika Sreejit Narayan

Are we Sheeple?: Groupthink and its Influence on Moral Judgments Expressed on Reddit

Isabelle Brase, Abhinav Wunnava, and Ella Yuan

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Social, Communicational, and Emotional Effects of Social Skills Interventions on Autistic Minors Madison Cohen and Morgan Synn

Optical Evidence for Indirect to Direct Bandgap Transition in Monolayer Transition Metal Dichalcogenides Phoebe Lee, Arden Lu, and Matthew Yin

For the People but Not of the People? An Examination of the Dynamics between American Public Opinion and NASA Operations, 1958-1972

Jeffrey (Jingxuan) Lin, Chauncey Nguyen, and Jack Sun

The Role of the Hippocampus in Context-Dependent Decision Making and Continual Learning Kevin Chang, Richard Jeong, and Anoushka Veeraraghavan

Bigger Number, Better Morals? Exploring the Relationship Between Morality and Efficiency Araika Ramchandran, Helen Baird Trottmann, and Andrew Wesel

Ethical Enigmas: How Catholicism in the Supreme Court Established Privileges for Religious Institutions Ketan Altekar-Okazaki, Abhishek Rao, and Erik Wang

Investigating The Relationship Between the Gamification of Social Media and ADHD Symptoms Nila Dharmaraj, Akshay Shivkumar, and Anthony Z. Zheng

Machine Learning Predictions of Additively Manufactured Alloy Crack Susceptibilities Shamak Gowda, Chloe Hung, and Alice Zou