



2024

Future Faculty Career Exploration Program

PARTICIPANT PROFILES & ABSTRACTS

September 25-28

RIT

Division of Diversity and Inclusion
**Office of Faculty
Diversity and Recruitment**

The Rochester Institute of Technology is pleased to welcome you to its 21st Future Faculty Career Exploration Program. With the landscape of higher education is ever-evolving, we are glad you can join us this year for our annual program.

This fall, RIT welcomed its most diverse freshmen class ever. We are a place where innovation and ingenuity come together to give our students a unique experience. Our campus has been transformed with several construction projects over the past year. The newest showcase is the SHED—Student Hall for Exploration and Development, a 100,000-plus-square-foot facility. This building has become the epicenter of what RIT represents with three floors of makerspaces, a black-box theatre, a dance studio, and music rehearsal spaces. In addition, our athletic facilities have undergone a facelift, our new athletic stadium is under construction, our business and art & design colleges have been expanded and remodeled, and a new performing arts theatre is under construction. RIT also began offering two new Ph.D. programs last fall. The Saunders College of Business now offers a Ph.D. in business administration, and the College of Liberal Arts offers a doctoral degree in cognitive science.

As a leader in higher education, RIT is compelled to reexamine our history, renew and refocus our existing commitments, and expand our impact by leveraging our passion to create a more diverse, equitable, and inclusive society. With input from RIT students, faculty, staff, and alumni, we developed an Action Plan for Race and Ethnicity is guiding RIT's efforts as we roll out new programs, services, and policies to help create equal access, opportunity, and respect for all students, faculty, and staff.

RIT is more committed than ever to growing its diversity, and creating an environment that allows diversity to thrive. Using this plan as a guide, we look specifically at initiatives to recruit and retain and retain a diverse and excellent faculty. RIT's strong commitment to the Future Faculty Career Exploration Program is key to the success of our efforts.

We welcome you for a productive and exciting visit!

David C. Munson, Jr.
RIT President



Future Faculty Colleagues,

I am delighted to welcome you as part of the 21st cohort of the Future Faculty Career Exploration Program at Rochester Institute of Technology. This program plays a crucial role in recruiting exceptional faculty to RIT, and creates opportunities for you to build a network among peers as you prepare for your university career. Congratulations on being selected to participate in our annual program!

At RIT, we place a high value on hiring a diverse community of scientists, artists and intellectuals enabling us to be a strong and vibrant university—one that attracts creative and innovative students. The Future Faculty Career Exploration Program plays an integral part in making RIT a more diverse and inclusive university.

This nationally recognized program is designed to help us learn more about you, your research and career interests. It also allows you to get a first-hand look at RIT. While you are on campus, you'll connect with faculty and have the opportunity to share your research, scholarship, and artistic work.

The Office of Faculty Diversity and Recruitment has put forth tremendous effort to recruit and welcome prospective faculty. This year's cohort includes individuals at all stages of their careers—from Ph.D. candidates to recent graduates to postdoctoral fellows. This program allows participants at the earliest stages of their academic careers to explore career opportunities at the university, and experience RIT as a prospective workplace.

Thank you for participating in this engaging and exciting professional development opportunity, and welcome to RIT.

Sincerely,

Prabu David, Ph.D.

Provost and Senior
Vice President for
Academic Affairs



Congratulations on being selected to participate in the 21st class of Rochester Institute of Technology's Future Faculty Career Exploration Program! I applaud your many achievements to date and take great honor in formally welcoming your participation in this exciting four-day RIT event.

RIT advances the exceptional through a welcoming and inclusive environment! Diversity and inclusion are fundamental aspects of RIT's identity as an institution and are intrinsically tied to its historic strength as one of America's most innovative and forward-looking universities. The *I am RIT Faculty* campaign highlights and celebrates some of our excellent and diverse faculty. RIT enjoys national recognition among leaders in diversity in higher education. For example, *INSIGHT Into Diversity* magazine recognized Rochester Institute of Technology as a 2023 Higher Education in Diversity (HEED) Award recipient and a 2023 Diversity Champion, marking the tenth year in a row RIT has been named a HEED Award recipient and ninth consecutive year as a Diversity Champion. *Winds of Change* magazine, for the 13th year, listed RIT as one of the "Top 200 Colleges for Native Americans. Further, RIT was named by *STEM Workforce Diversity* magazine among its top 20 universities in 2021 for RIT's work to help diversify the STEM workforce.

Today, RIT positions itself to increase the number and percent of African American, Latinx and Native American (AALANA) and female faculty, especially in STEM fields. We understand well the importance of diverse, talented faculty in moving RIT forward in greatness through difference. So, we are honored to welcome you to our campus as we learn more about each other.

An outstanding three-day program has been prepared for you. During this time, I hope your many questions regarding RIT/NTID—our students, staff, faculty, programs, departments, colleges, campus and community—are addressed and answered. Most important, I hope you get a better idea of your potential space in the RIT family as we both explore the many opportunities for a wonderful relationship.

Keith Jenkins, Ph.D.
Vice President and Associate
Provost for Diversity &
Inclusion



Dear Colleagues,

Congratulations on your selection for the 21st class of Rochester Institute of Technology's Future Faculty Career Exploration program! Your accomplishments to date are commendable, and I am delighted to welcome you to this program.

Our commitment to inclusive excellence at RIT is unwavering, and this program exemplifies that commitment. We recognize that diverse perspectives are essential for fostering creativity and innovation in the classroom, research, and scholarship across our campus.

As part of the Office of Faculty Affairs, we focus on providing faculty with career development opportunities. Through best practices, policies, programs, and professional development, we support our faculty at every stage of their careers. I look forward to sharing more about the resources and support our office provides.

Your participation in the future faculty program is valued, and I look forward to working with you to identify opportunities to launch your career forward at RIT. Thank you for contributing to our mission of shaping the future and improving the world through creativity and innovation!

**LaVerne McQuiller
Williams, Ph.D., J.D.**
Associate Provost for Faculty
Affairs
Office of Faculty Affairs



Dear Future Colleagues,

Welcome and congratulations on your acceptance into RIT's Future Faculty Career Exploration Program.

For most of you, this will be your first opportunity to experience the culture of Rochester and its premiere technology university. We trust that your experience here will be a transformational one. For others of you who have already participated in our Pathways to RIT events, thank you for your continued engagement with RIT. Whether this is your first experience or not, you should be as proud of your accomplishments as we are.

After a rigorous national search, you were selected from among the brightest minds in the nation. Your cohort reflects the highest level of research, art, skill and expertise that we could find. Your presence honors us and exemplifies RIT's commitment to inclusive excellence. I hope that you will discover the attraction of innovation, and the professional quality which sets RIT apart.

Over the next few days, I encourage you to enjoy the outstanding workshops, panels, and networking events. I invite you to shine as brightly as you can through your presentations, and the opportunities you will have to collaborate and cultivate relationships with RIT faculty and other cohort members.

I look forward to personally meeting each of you.

Congratulations again,

**Torrence E. Sparkman,
Ph.D.**

Assistant Provost and Assistant
Vice President for Faculty
Diversity & Recruitment



Contents

9	
College of Art and Design	
Carlos Augusto Bautista Isaza	10
13	
Saunders College of Business	
Nikisha Alcindor	14
Estelle E. Archibold, Ph.D.	16
Kalan Horton	18
21	
B. Thomas Golisano College of Computing and Information Sciences	
Sayde King	22
Elizabeth Ondula	24
27	
College of Engineering Technology	
Hafiz Oyediran	28
31	
College of Liberal Arts	
Mayssa Hashaad	32
35	
College of Science	
Mbaye Diouf, Ph.D.	36
J. Carlos Martínez Mori, Ph.D.	38
Edwin Solares, Ph.D.	40

College of Art and Design

Carlos Augusto Bautista Isaza

Carlos Augusto Bautista Isaza

Ph.D. Candidate
Virginia Tech



Profile

Carlos Bautista is a Ph.D. student at Virginia Tech, specializing in human-computer interaction (HCI), computer supported cooperative work and social computing (CSCW), and human-centered design. He earned his BS in industrial design at Pontificia Universidad Javeriana in Bogotá, Colombia, and his MS in integrated digital media from NYU Tandon School of Engineering, New York, NY. Currently, he is pursuing his Ph.D. in computer science and applications at Virginia Tech.

Bautista's research includes pioneering projects such as MineSafe, a socio-technical intervention for rural areas affected by landmines, and MOMIS, a mixed reality (MR) initiative for co-located multiuser learning experiences. His research aims to enhance human-centered technologies and improve user experiences through innovative design and implementation.

In addition to his research, Bautista has excelled in technical development, 3D modeling, and interaction design. He contributed to the interactive installation "Penelope," working on 3D modeling, animation, and physical computing (Arduino) in collaboration with professors from NYU and Pratt Institute.

Professionally, Bautista was a TED Resident, where he advanced MineSafe, developing an Android-based map application for safe walking paths in landmine-affected areas. He was also a research associate at the Computer Science NYU Tandon School of Engineering where he raised funds from private donors to continue working on technologies to help people in those areas of the world.

His work has been recognized in conferences, with publications such as "Understanding Multi User, Mobile-based Mixed Reality for Group MR Games" in the International ACM Conference on CSCW, and "OtherTube: Facilitating Content Discovery and Reflection by Exchanging YouTube Recommendations with Strangers" in CHI 2022, which earned a Best Paper Honorable Mention.

Carlos Bautista is multilingual, fluent in English, Spanish, and French. His leadership, public speaking, and entrepreneurship skills have been demonstrated through various roles and projects. He aspires to continue bridging the gap between technology and human interaction through innovative research and design, aiming to create impactful socio-technical solutions.

Abstract

Enhancing Inclusivity Through Human-Computer Interaction: Research and Interventions for Marginalized Communities

As computing increasingly permeates various aspects of life, the field of Human-Computer Interaction (HCI) delves deeper into understanding complex human-computer interactions. My research focuses on the dynamics of marginalized communities and their interaction with technology, aiming to foster inclusivity and reflection through computational systems.

Throughout my academic journey, I have worked with diverse populations such as children, older adults, rural communities, and homeless women. The goal has been to identify factors contributing to their vulnerability and to develop technological interventions to mitigate these challenges. Key projects include:

- 1. MineSafe:** Aimed at supporting socio-technical interventions in landmine-affected rural areas, this project explores the dynamics of trust, community, and the ethical responsibilities of researchers in such fraught environments.
- 2. OtherTube:** This YouTube browser extension facilitates the exchange of algorithm-generated recommendations among strangers to promote reflection on media consumption habits and to break filter bubbles.
- 3. Reaction Videos:** A qualitative study on the motivations and participatory culture behind viewing reaction videos on platforms like YouTube and TikTok.
- 4. MOMIS:** A mixed reality project designed to provide inclusive, co-located multiuser learning experiences without the need for head-worn devices, thereby ensuring accessibility for a broader audience.

My research underscores the importance of adapting HCI methodologies to address the unique challenges faced by marginalized communities. This includes a focus on trust-building, ethical considerations, and the need for systems that accommodate doubt and uncertainty. The insights from my work have been presented at prestigious HCI conferences such as CHI and CSCW, and published in leading journals like ToCHI.

Moving forward, I aim to continue exploring the intersection of technology and marginalized communities, with a particular emphasis on developing systems that prioritize community assets over needs-based approaches. Additionally, I plan to expand my research into creating mixed reality experiences that cater to diverse user groups, addressing issues of asymmetry in access to technology.

By leveraging my expertise in HCI, CSCW, and human-centered design, I strive to develop innovative solutions that enhance inclusivity and support vulnerable populations in navigating their technological environments. This work not only contributes to the academic discourse but also has practical implications for improving the lives of those who are often overlooked in the digital age.

Saunders College of Business

Nikisha Alcindor

Estelle E. Archibold, Ph.D.

Kalan Horton

Nikisha Alcindor

Ph.D. Candidate
Graduate Center of the City of New York



Profile

Nikisha Alcindor is a data scientist who specializes in artificial intelligence and has years of investing and fundraising experience. She is pursuing her Ph.D. in Business - Strategic Management at the Graduate Center of The City University of New York (CUNY), Baruch College - Zicklin School of Business. She is a CUNY Graduate Center Fellow, the Provost Enhancement Fellow, and the 2021 Dean Huss Teaching Award recipient.

Alcindor specializes in strategic management and her research area is in mergers and acquisitions. She examines the success rates of M&A transactions by applying artificial intelligence and machine learning to decision and risk analysis. By merging artificial intelligence with financial modeling, she hopes to improve the corporate valuation model by incorporating qualitative factors, like CEO personality, into the Capital Asset Pricing Model (CAPM). She has presented her research at the Strategic Management Society Conference, the Harvard Rising Scholars Conference, and The East Coast Doctoral Conference.

Alcindor has an extensive background in corporate finance, healthcare, and asset management. Before joining the Ph.D. program, she spent time in practice at Apex Partners, Pfizer Inc., Johnson & Johnson, Goldman Sachs, and Columbia University. She is a former advisory director to the PCA Retirement & Benefits, Inc. and a former board member of the Upper Manhattan Empowerment Zone.

She gives back to her community through her nonprofit, the STEM Educational Institute, Inc., which provides college scholarships and free programming in STEM, financial literacy, and mental health to underrepresented high school students across the nation.

Alcindor holds a BA in chemistry from Emory University and an MBA from Columbia Business School as a Leon Cooperman Scholar.

Abstract

Survival of The Fittest: CEO Personality and Mergers & Acquisitions (M&A) Completion

Research shows that organizations reflect top management decisions (Hambrick & Mason, 1984). Decisions made by managers involving change are vital to employee satisfaction and society. Scholars in strategic management have long demonstrated interest in how Chief Executive Officers (CEOs) characteristics, such as personality, influence strategic decisions such as mergers and acquisitions (M&A) (Chatterjee & Hambrick, 2011; Herrmann & Nadkarni, 2014). Upper echelons theory posits that CEOs and Top Management Teams (TMT) directly influence organizational decision-making based on their demographics, values, and personalities (Hambrick, 2007), with recent research focusing on how specific components of personality influence M&A in terms of completion (Aktas, De Bodt, Bollaert, & Roll, 2016; Malmendier & Tate, 2008) as well as post-acquisition performance (Renneboog & Vansteenkiste, 2020).

The question then is, what are the conditions under which the personality of a CEO pursuing M&A impacts decision-making, and which CEO personality traits incorporate investor feedback into decision-making. This paper will provide a comprehensive overview of how all the different components of personality impact CEO decision-making, particularly during M&A. This paper extends Upper Echelons' research by investigating how CEO personality traits influence strategic decision-making and how these personality traits incorporate investor feedback. For years, M&A has been used by corporations to increase firm value and outpace competitors. The desire to participate in M&A activity is at a 10-year high, with announced transactions totaling \$4.11 trillion in 2018 (Chen and Shi 2019), affecting millions of individuals. In 2023 alone, over 39,000 M&A deals were announced globally, representing close to \$2.5 trillion (Institute of Mergers Acquisitions and Alliances).

This research draws from personality literature and explores how the Five-Factor Model (FFM) of personality (McCrae & Costa, 1985) influences strategic decisions and M&A outcomes. The FFM personality traits are agreeableness, conscientiousness, extraversion, openness, and emotional stability (neuroticism). Preliminary results show that certain CEO personality traits influence M&A outcomes and determine the incorporation of investor feedback.

Estelle E. Archibold, Ph.D.

Postdoctoral Scholar
The Pennsylvania State University



Profile

Dr. Estelle E. Archibold is an organizational behavior researcher who studies intragroup conflict, multi-stakeholder dynamics, leadership ethics and cross-cultural management in organizations and fields. Dr. Archibold is currently a postdoctoral scholar at The Pennsylvania State University in the management and organization department. She attained her doctoral degree in organizational behavior from Case Western Reserve University's Weatherhead School of Management, where she became an AGEF – NSF (Alliances for Graduate Education and the Professoriate – National Science Foundation) fellow. She currently holds a post as a Research Affiliate with the Leadership Initiative at the Gerald R. Ford School of Policy Studies at the University of Michigan and has held a leadership role with the Conflict Management Division of the Academy of Management.

Dr. Archibold investigates the impact of conflict on generative multi-stakeholder processes, the ethical voice of change agents, and social innovations that arise within social movements. She developed a theory of generative conflict based on a multi-year multi-method ethnography. In this ongoing research, she studies the work of leaders in an organization, and their abilities to navigate and transform conflict in work groups. In her research, she employs multiple methods of data generation (including ethnographic fieldwork, digital methods, and experiments), as well as data analysis (including grounded theory, thematic analysis, gestural analysis, and experimental analysis). This generative work lays the foundation for several empirical studies and manuscripts in the United States and other international settings.

Dr. Archibold's research draws on insights from years of academic study and practice regarding conflict transformation, reconciliation, and ethics in the United States and abroad. To expand the impact of her research, she collaborates with scholars, policymakers, and practitioners to explore the impact of cross-cultural transformative leadership, restorative justice, and social movements on public policy discourse and decision-making. She also uses her research to work cross-culturally with communities and institutions in the United States and Africa that seek to transform conflict following organizational, social, and political conflicts and crises.

Abstract

Generative Conflict In Equity Work Groups: The Role Of Collective Ritual, Shared Authenticity And Reflexive Engagement In Equity Innovation

Based on the findings of a 30-month ethnographic study of equity work groups in a school district, I build theory on how collective rituals facilitate shared authenticity and reflexive engagement with race-related conflict in equity work groups. I find that race-related conflict in proceeds along three pathways: acquiescent, generative, and obstructive. These three pathways emerged based on (1) group members' engagement in collective rituals across racial differences, and (2) the continuity of shared authenticity and reflexive engagement among members of the equity work groups. In both acquiescent and obstructive intragroup conflict scenarios, shared authenticity and reflexive engagement were not resonant features of the group dynamics over time, resulting in lower vitality and relational dissonance among group members. In generative scenarios, I found that group members' participation in collective rituals led to the emergence of shared authenticity along with group-level reflexive engagement with race-related conflict, leading to changes in both individual and group conflict behavior and equity work outcomes. Ultimately, I present a process model that demonstrates the conditions under which equity work group dynamics lead to more relational connectedness and equity innovation.

Kalan Horton

Ph.D. Candidate
Florida State University



Profile

Kalan G. Horton will earn his Ph.D. in strategy from Florida State University's College of Business. Prior to starting his Ph.D. program, he worked for the Boeing Co. in Supply Chain Management. He fills multiple roles at Florida State as the instructor of record for strategic management and competitive dynamics undergraduate courses; a research mentor in the Undergraduate Research Opportunity Program (UROP); and both teaching and research assistant roles.

Horton's research focuses on two areas: business ecosystems and their evolution, as well as the role of ideologies in non-market strategy. He is early in his career as an academic but has recently received his first publication in the *European Management Journal* with more works in preparation and under review in top research outlets. He recently defended his dissertation proposal tentatively titled "Evolution, Adaptations, and Complexity in Ecosystems: Three Essays on Ecosystem Evolution."

Abstract

Complementors' Network Evolution: Power Balancing in Platform Ecosystems

This research investigates how complementors' network evolution influences their dependence on focal platforms and subsequent performance within platform ecosystems. Platform ecosystems, comprising core technology providers (sponsors) and complementary product/service producers (complementors), are characterized by power imbalances that often favor sponsors. While existing literature has focused on sponsors' networks and their effects on ecosystem dynamics, this study shifts attention to complementors' strategic responses to these power asymmetries. Drawing on network effects and power-dependence theories, we propose that complementors can effectively rebalance power and enhance performance through two key strategies: extension of the power network (e.g., multihoming) and network integration. These strategies not only mitigate dependence but also leverage the value created by both the number of users and their interactions within networks. Using a longitudinal panel dataset of video game title releases from 1977 to 2023, we employ a difference-in-difference quasi-experimental design to empirically examine the relationships between complementors' network evolution strategies and their performance outcomes. Our findings contribute to the growing literature on platform ecosystem evolution by introducing the concept of the integrated network as a crucial step in network evolution.

This study highlights the active role of complementors in shaping platform dynamics, offering insights into viable dependence mitigation strategies within ecosystems characterized by limited alternative sources and high competition. By integrating perspectives from power-dependence and network externalities theories, we provide a more comprehensive understanding of complementor strategies. This research has significant implications for both scholars and practitioners in understanding the evolving power dynamics within platform ecosystems and the strategic options available to complementors for managing dependencies and improving performance.

B. Thomas Golisano College of Computing and Information Sciences

Sayde King

Elizabeth Ondula

Sayde King

Ph.D. Candidate
University of South Florida



Profile

Sayde King is a Ph.D. candidate in the Department of Computer Science and Engineering at the University of South Florida. She also received her MS and BS in computer science from the University of South Florida in 2022, and 2019, respectively. King is a member of the Cyber Identity and Behavior Research Laboratory, which studies biometric systems, smart sensing for human behavior analyses, and applied natural language processing. Her current research explores automated deception detection for non-engineering applications. King is a firm believer in user-centered design and aims to involve stakeholders throughout the design process—including the discussion surrounding whether the technology is needed in the first place. She employs a range of qualitative methods accompanied by applying artificial intelligence in empirical investigations.

King has actively contributed to the academic community by serving as a program committee member for workshops at renowned conferences such as the IEEE International Conference on Automatic Face and Gesture Recognition and the IEEE/IAPR International Conference on Pattern Recognition. She is a Florida Education Fund McKnight Dissertation Fellow, Alfred P. Sloan Foundation Minority Ph.D. Scholar, and a National GEM Consortium Employer Fellow, sponsored by the MIT Lincoln Laboratory.

Abstract

AI for Mental Health: A Focus on Behavior and Deception

In this talk, King explores applied artificial intelligence in mental health contexts. Summarizing three research projects, she:

- (1) details the disclosure-based self-stigma reduction program, Up To Me, which was developed to increase inclusion and engagement of people with mental illness on college campuses by teaching strategies to weigh costs and benefits of disclosing one's mental illness. Further, King elaborates on the program's evaluation mechanisms, which involve both self-reported and passively recorded smartphone sensor data. The latter reflects a unique merging of behavioral and computer sciences that serves to facilitate behavioral modeling using artificial intelligence as an objective measure of Up to Me outcomes.
- (2) unpacks qualitative interview data from twenty mental health professionals characterizing the present landscape of client deception with respect to clinician-client collaboration via five key elements and eliciting their perspectives on critical considerations regarding the potential deployment of AI for real-time deception detection during therapeutic sessions.
- (3) unveils the saliency of facial, affective, eye gaze, and body gesture features for deception detection across four distinct domains: biography, academics, mental health, and crime/forensics. Leveraging four hundred video recordings from two datasets, King aims to identify key indicators of deception within these domains and assess which indicators persist across different contexts. Our findings indicate that while certain features, such as face and gesture, are particularly effective in specific domains (e.g., crime/forensics), other indicators, such as facial movements and eye gaze, consistently emerge as significant cues across multiple domains, including biographical and mental health contexts.

Elizabeth Ondula

Ph.D. Candidate
University of Southern California



Profile

Elizabeth Akinyi Ondula is a Ph.D. candidate in Thomas Lord Department of Computer Science at the University of Southern California (USC). She received her B.Eng (2015) from Technical University of Kenya in electrical and electronics engineering. Her research is centered on developing and evaluating AI systems, with a particular focus on Reinforcement Learning (RL) and Large Language Model (LLM) based multi-agent systems for decision-making under uncertainty in socially impactful applications. Elizabeth's work aims to ensure these AI systems are robust, safe, transparent, and effective in critical domains such as epidemic control and collaborative decision-making scenarios, including hiring processes.

Before her Ph.D. studies, Ondula held various roles in technology companies, including, as a software engineer at IBM Research in Nairobi. As head of product development at Brave Venture Labs, she managed the design and development of a recruiting system leveraging AI for job matching, resulting in a tool used for screening hiring decisions. Additionally, she served as a software developer intern at IBM Research, where she designed and developed a user interface for a financial investment mobile application and conducted user studies.

Ondula's contributions to the field include publications and patents. She has been awarded various fellowships and grants, including the Annenberg Fellowship and the Code for Science and Society Fellowship. In addition to her research, she is actively involved in mentorship and leadership roles. She is the founder of SUITERS-RL, a bi-weekly reading group focused on the exploration and applications of Reinforcement Learning, emphasizing Simulations, Usability, Interpretability, Theory, Ethical considerations, Real-world applications, and Societal implications.

Abstract

Evaluating Policies and Agent Behavior in Stochastic Environments

My research focuses on advancing the development and evaluation of AI systems, with a particular emphasis on Reinforcement Learning (RL) and Large Language Model (LLM) based multi-agent systems for decision-making under uncertainty in socially impactful applications. By creating simulation environments and evaluation frameworks, my goal is to investigate the reliability, feasibility, interpretability, and explainability of these AI systems in critical domains such as epidemic control and collaborative decision-making in scenarios like hiring processes.

A significant portion of my research employs RL to address the challenge of maintaining safe occupancy in public spaces during epidemics. This involves utilizing stochastic models to simulate the spread of infections and employing RL algorithms to develop dynamic policies that adapt to changing circumstances. These policies must navigate the trade-offs between safety and utility considerations, ensuring minimal disruption while prioritizing public health. I analyze the stability of these RL-derived policies, focusing on their adaptability, convergence, and robustness. This includes evaluating how abrupt changes in occupancy levels can impact the overall operation and effectiveness of epidemic control measures.

To enhance the realism of epidemic simulations, I am exploring the integration of LLMs to model human behavior within the simulation environment. This approach allows for a more comprehensive understanding of the complex dynamics at play during an epidemic. By incorporating realistic human behavior patterns, the simulations can provide more accurate insights into how different intervention strategies might perform in real-world scenarios.

Another key area of my research is the Sentimental Agents framework, which leverages LLMs to equip agents with distinct mental models for studying collaborative decision-making. This framework integrates sentiment analysis with a non-Bayesian updating mechanism to systematically analyze agents' beliefs and interactions. By observing sentiment volatility and the evolution of opinions throughout conversations, this work enables a deeper understanding of how sentiments and cognitive biases influence group decisions. The Sentimental Agents framework serves as a tool to model and compare different collaborative decision-making approaches, providing insights into the dynamics of agent interactions and the formation of collective decisions.

Through these research efforts, I aim to contribute to the development of AI systems that are capable of making robust, safe, and transparent decisions in stochastic environments. By evaluating the policies and behaviors of AI agents, my work seeks to bridge the gap between theoretical models and practical applications, ensuring that AI systems can effectively address real-world challenges in socially critical domains.

College of Engineering Technology

Hafiz Oyediran

Hafiz Oyediran

Ph.D. Candidate
University of Nebraska-Lincoln



Profile

Hafiz Oyediran is a Ph.D. candidate in the Department of Construction Engineering and Management at the Durham School of Architectural Engineering and Construction, College of Engineering at the University of Nebraska-Lincoln. His Ph.D. research focuses on the integration of robotics technologies with Building Information Modeling (BIM) for construction task planning and execution. He is currently working on studies that focus on the safe planning of robot operations in the execution of tasks considering the dynamic nature of construction sites. Oyediran's research interest includes construction robot safety and planning, robotics applicability in construction, Building Information Modeling, and the use of virtual, augmented, and mixed reality for construction engineering and management. Before starting his Ph.D., he worked in numerous roles as an intern structural engineer, site supervisor, and project manager.

Oyediran holds an MS in construction management and a BS in building from the University of Lagos, Nigeria, and a Higher National Diploma in civil engineering technology from Lagos State Polytechnic, Lagos, Nigeria. He is also a director of an NGO that was co-founded with friends for the advocacy of BIM adoption in Africa called the "BIM Africa Initiative." The organization has grown to be one of the known names for BIM advocacy and adoption in Africa.

Abstract

Robot Integrated 4-Dimensional Building Information Modeling (4D BIM)

In the construction industry, the use of autonomous robots is considered a solution to overcome the heavy reliance on human workers to perform repetitive, strenuous, and hazardous tasks. While these robots offer significant advantages, ensuring their safe and efficient integration within construction sites requires precise planning. Such planning must account for the varying project complexities such as scope, site layout, tasks, timelines, existence of human workers, and other spatiotemporal conditions of the construction site. Currently, there are no methods to safely plan autonomous robot operations considering these factors within the overarching construction planning process. Thus, autonomous robots operating independently cannot understand and adapt to the ever-changing conditions of the construction site.

4D BIM and related technologies represent arguably the most advanced method of planning for projects considering the spatiotemporal context of the construction site. They can provide a rough simulation and visualization of how a construction project is expected to progress over time. However, they lack the capabilities to plan and simulate the elemental motions of autonomous robot operations. This poses a major challenge to planning robot operations for construction tasks considering their spatial coordination with human workers and site conditions. To address this challenge, the goal of this research is to create a method to plan and execute autonomous robot operations considering the spatiotemporal of the construction site.

To achieve this, a prototype 4D BIM-based robot task planner will be developed to plan autonomous robot operations with the framework of 4D BIM. Subsequently, a rule-based system for detecting potentially unsafe situations during the planning process will be developed and integrated into the planner. Then, a method for mitigating the detected potentially unsafe situations is developed to ensure the planner can be used safely and efficiently plan autonomous construction robot operations. The proposed task planner is then evaluated for planning construction tasks through comprehensive case studies. The research will demonstrate the importance of planning autonomous robot operations in the context of 4D BIM.

College of Liberal Arts

Mayssa Hashaad

Mayssa Hashaad

Ph.D. Candidate
University of Arkansas



Profile

Mayssa Hashaad is a Ph.D. candidate at the University of Arkansas. Over the past five years, she has pursued concurrent degrees, balancing a Ph.D. in comparative literature and cultural studies with an MFA in creative writing and literary translation. Graduating from the MFA program in May 2024, she is now progressing towards defending her doctoral dissertation and graduating by May 2025. Hashaad also holds an MA in English Literature from Benha University in Egypt.

Hashaad's research interests are interdisciplinary, focusing on world literatures, cultural studies, gender studies, literary translation, and women studies, particularly women's prison literature. Her current research investigates the productions of MENA/SWANA women writers in prison literature, exploring themes such as subjugated identities, trauma, and the intersectionality of race, class, gender, and power dynamics. She aims to shed light on issues of gender-based violence, agency, and women's subversive resistance through a postcolonial gender lens. As an MFA translator, Hashaad continues to highlight the intersectionality of creative writing and world literature in her academic and professional pursuits.

As a current Ph.D. graduate teaching assistant, Hashaad supports teaching, research, and administrative functions, fostering a collaborative academic environment. Her role as a translation editor at The Arkansas International Literary Magazine since 2020 showcases her editorial skills and dedication to literary translation. Hashaad also worked as a teaching assistant of English Language and Literature with over nine years of experience at Menoufia University in Egypt.

A Fulbright scholar, Hashaad advocates for cross-cultural exchange, equity, and diversity in international education. She has coordinated, assisted, and taught in numerous special educational programs at the Spring International Language Center, University of Arkansas (2021-2023).

Hashaad's academic achievements include the James and Ellen Wadley Roper Fellowship, Carolyn F. Walton Cole Endowed Scholarship in Creative Writing, and the Vance and Mary Celestia Parler Randolph Fellowship in English.

Abstract

Bridging Narratives Through Scholarship and Art: Exploring MENA/SWANA Women's Prison Literature and Amplifying Diverse Voices Through the Transformative Power of Literary Translation

In this presentation, Hashaad will share her academic research alongside her creative writing and artistic practice. Her work focuses on MENA/SWANA women writers in prison literature, aiming to highlight marginalized voices and narratives of resilience. Simultaneously, this research directly informs her translation efforts, as she strives to convey to a broader audience the nuanced experiences and cultural contexts of these writers.

Hashaad's current Ph.D. research primarily investigates how MENA/SWANA women writers explore subjugated identities, trauma associated with incarceration, and the intersectionality of race, class, gender relations, sexuality, and power dynamics. Through a postcolonial feminist lens, the study examines the social, economic, political, and cultural reflections and impacts on imprisoned women, shedding light on issues of gender-based violence, agency, subjugation, and subversive resistance.

Since the emergence of trauma studies in the early 1990s, the field has predominantly focused on Western experiences, often neglecting the specificity of non-Western and minority cultural traumas. In an effort to address this gap and decentralize the Eurocentric discipline of trauma literature, the current study centers on narratives by MENA/SWANA women writers and artists, presenting diverse models of individual and collective suffering in various postcolonial, non-Western contexts. By examining these works, the research seeks to decentralize the Eurocentric discipline of trauma literature and bring public attention to the human experiences depicted in these narratives. This includes understanding the concept of prison for women beyond physical confinement to encompass social, gender, and actual prison cells, analyzed through a postcolonial lens.

Concurrently, as a translator, Hashaad is dedicated to bringing Arabic literary works by women writers, particularly plays, to new audiences, fostering an exchange of artistic traditions while preserving their authenticity. Her artistic practice revolves around the transformative power of translation, driven by her passion for cross-cultural dialogue and amplifying diverse voices. In this presentation, Hashaad will highlight her recent MFA thesis, "Echoes of Silence: A Translation of Fathia al-Assal's *Women's Prison*," underscoring her commitment to making underrepresented voices in MENA/SWANA women's literature accessible. Looking forward, Hashaad aims to create a dynamic fusion of literary translation and performative arts, envisioning staged productions that bring the richness of Arabic plays written by women to life for diverse audiences. To achieve this, RIT's unconventional and advanced approach aligns with her progressive, creative, and inclusive mindset and practice, laying the groundwork for a productive collaboration.

College of Science

Mbaye Diouf, Ph.D.

Juan Carlos Martinez Mori, Ph.D.

Edwin Solares, Ph.D.

Mbaye Diouf, Ph.D.

Senior Research Associate
Brown University



Profile

Dr. Mbaye Diouf received his master's degree in atomic and nuclear physics in 2014, from the University of Cheikh Anta Diop (UCAD), Senegal. He earned his Ph.D. in 2017, from UCAD/Engineering School of Communication of Tunis (Sup'Com), Tunisia. He joined Brown University, School of Engineering in February 2020, as a Postdoctoral research associate. He is now a senior research associate at Brown University, where he almost single-handedly designed and built the PROBE Lab and has trained and mentored many of the lab's students.

Dr. Diouf's current and future research will broadly target optics and photonics, including nonlinear optics, space-time optics, multiphoton microscopy, light sheet microscopy, and supercontinuum laser sources. He led the first-ever discovery of space-time wave packets, which he experimentally proved to be classically entangled in both space-time and space-polarization. An active member of OPTICA, he co-founded and served as the inaugural president of the Senegalese OPTICA student chapter. Trilingual in Wolof, French, and English, Dr. Diouf intends to prioritize DEI in his research, teaching, and leadership, particularly for those on the periphery of higher education.

Abstract

Developing of Novel Optical Systems for Biophotonic Applications

Mid-infrared (MIR) supercontinuum generation (SCG) has emerged as a significant area of research, offering opportunities in various scientific and technological domains. We will first discuss our numerical study on highly nonlinear photonic crystal fibers to produce MIR SCG for potential applications for communications, imaging, spectroscopy, and optical coherence tomography. The second part of my talk will focus on space-time (ST) optics: a new structure of spatio-temporal light fields. The ST light sheet represents a category of pulsed optical fields that retain their structure without experiencing diffraction or dispersion. This one-dimensional (1D) ST light sheet is characterized by classical entanglement, a correlation between at least two non-separable intrinsic degrees-of-freedom. In particular, we show that 1D ST light sheets exhibit self-healing characteristics. The third and the last part of my talk will discuss our preliminary investigation using ST light sheets for imaging and biosensing.

Our experimental findings demonstrate the capability of the ST light sheets to exhibit resistance in turbid environments such as biological tissues. The results of our work could be useful for a wide range of optical applications including bioimaging, communications, astronomy, and optical trapping. The talk will conclude with a brief discussion of some of the recent additional directions that we are exploring.

J. Carlos Martínez Mori, Ph.D.

Postdoctoral Scholar
Georgia Institute of Technology



Profile

Dr. Carlos Martínez is a Schmidt Science Fellow and a President's Postdoctoral Fellow at H. Milton Stewart School of Industrial and Systems Engineering at the Georgia Institute of Technology. He earned his PhD in applied mathematics from Cornell University and his BS in civil engineering from the University of Illinois at Urbana-Champaign.

Dr. Martínez is broadly interested in discrete mathematics, from game theory and discrete optimization (with a focus on applications around equitable public decision-making) to algebraic combinatorics. His professional mission is to include underrepresented students in the advancement of mathematics research; hence advancing mathematics, and at the same strengthening their identity as integral members of our professional community. In his spare time, he enjoys traveling, coffee, and the outdoors.

Abstract

Who is the GOAT? Sports Rankings and Random Walks on the Symmetric Group

Given a collection of historical sports rankings, can one determine which athlete is the *Greatest of All Time*, i.e., the GOAT? In this work, we introduce a data-driven random walk on the symmetric group to obtain a stationary distribution over athlete rankings, spanning different time periods in sports history. We combine this distribution with a notion of stochastic dominance to obtain a partial order over the athletes. Implementing our methods by using publicly available data from the Association of Tennis Professionals (ATP) and the Women's Tennis Association (WTA), we determine the GOATs in the respective categories.

This is joint work with Gian-Gabriel Garcia.

Edwin Solares, Ph.D.

Lecturer
University of California, San Diego



Profile

Born and raised in the barrios of Southern California, Dr. Edwin Solares is a product of the community college system as well as the University of California. He has received prestigious fellowships such as the Southern California Edison Scholarship, the National Science Foundation (NSF) Bridge to the Doctorate, the NSF Graduate Research Fellowship, the University of California (UC) Presidents Pre-Professoriate Fellowship and the UC President's Postdoctoral Fellowship. Dr. Solares is currently teaching machine learning, AI, data science and an introductory course to python at UC San Diego in the Computer Science and Engineering Department and the Halicioğlu Data Science Institute.

Dr. Solares' research focuses on harnessing artificial intelligence (AI) for obtaining a sustainable future for all, in the face of our rapidly changing climate. His research group leverages and develops open-source intelligent algorithms in genomics, automation, and classification/detection. He also does research at exploring the evolutionary genetics behind food crops and indigenous species. The mission statement is "Forging a Sustainable Future: Harnessing Bioinformatics and AI to Ensure Food Security and Species Rescue in the Face of a Changing Climate."

Dr. Solares has a BS in computer science and a Ph.D. in biology and is interested in the genetics and genomics of plants as well as artificial intelligence and machine learning applications in bioinformatics, agricultural systems and species rescue.

Abstract

Forging a Sustainable Future: Harnessing Bioinformatics and Artificial Intelligence to Ensure Food Security and Species Rescue in a Changing Climate

As the global population continues to grow, so do the negative anthropogenic consequences to food security, species diversity and disease. Climate change is increasing temperatures and climate variability, leading to rising maximum temperatures, extreme weather, and an increase in extreme temperatures. These changes are leading to widespread losses in crop yields and species viability and the further spread of disease, which will only worsen with time. Advanced methods, such as AI, are needed to develop solutions to this growing problem. In my work, I apply AI and machine learning to genomic and visual data, with a focus on addressing food insecurity, species rescue, and rapid/early detection systems. The basis of this work is leveraging and developing open-source intelligent algorithms in genomics, modeling, automation, and classification/detection methods.

This presentation will describe our efforts to leverage computer vision and decision-making based on inference for phenotype quantification and species rescue in avocado, red abalone and sturgeon. Our team seeks to develop autonomous platforms for data collection for phenotype quantification of thousands of individual trees and on-site sex determination for scaling up breeding efforts of endangered species. Results from this research will help breeders measure traits quickly and reduce turnaround times for breeding selection to produce economically viable climate resilient crops, as well as reduce complexity in current breeding practices via automation of breeding programs focused on rescuing endangered species. With respect to disease, our net zero-energy input platform will also leverage computer vision models for aiding in disease detection using solar powered Edge AI computing devices.

Notes

Notes

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