



Institute for  
Digital InnovAtion



## THE WEEKLY

Dear Colleagues,

We are very excited to announce our second cohort of IDIA predoctoral fellows joining our IDIA community.

Alonso Gabriel Ogueda, Dibyendu Das, and Erika P De Los Santos join Jinyi Kim, Soelem Aafnan Bhuiyan, Facundo Nicolas Airaud, and Michael Crawshaw.



We thank all the PhD students for responding to this IDIA opportunity and submitting exceptionally strong applications. We also thank all the faculty coming together to support these students as they embark on ambitious and convergent research agendas addressing complex, transdisciplinary problems that align with IDIA's mission of catalyzing cutting-edge computing research that shapes the future of our digital society and promotes equality, well-being, security, and prosperity.

The project abstracts and 2-minute video presentations that the fellows have put together to describe their projects can be found at: <https://idia.gmu.edu/idia-predocctoral-fellows/>.

## UPCOMING EVENTS

Welcome New Faculty.

We are so excited for the new faculty who have joined Mason. We are holding a meet and greet on September 21 to welcome new faculty members. Come join us to learn about what [Institute for Digital InnovAtion \(IDIA\)](#) offers and how you can connect to its research infrastructure.

RSVP [here](#).

Deadline: **September 15, 2023 at 5:00 PM EST**



*Welcome*

**NEW FACULTY**

September 21 | 12-1PM

Johnson Center, G337, Fairfax Campus

*Join Us*

Come meet the Institute of Digital InnovAtion (IDIA).  
Learn about what IDIA offers and how you can connect to its research infrastructure.  
Light refreshments will be provided.

 Institute for  
Digital InnovAtion

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## Immersive Learning Technologies Conference

Immersive Technologies (IM-TECH) are changing how we think about workforce education and have become a popular tool for corporate training in recent years. IM-TECH, also known as Augmented Reality (AR), Mixed Reality (MR), Virtual Reality (VR), and Extended Reality (XR), allow educators, trainers, and instructional designers to create immersive learning experiences that go beyond traditional teaching and learning methods. For example, VR simulations can provide a realistic and engaging way to train employees for a variety of tasks, from customer service to safety procedures. With VR, employees can make mistakes and learn from their mistakes in a safe environment. They can also get a better understanding of how to handle different situations that they may encounter on the job. IM-TECH can help us to better understand the world around us and connect with others who share our interests.

More information available [here](#).



**THE LEARNING MULTIVERSE:  
IMMERSIVE TECHNOLOGIES (IM-  
TECH) IN TRAINING AND  
EDUCATION**

**VAN METRE HALL, MASON SQUARE**

**THURSDAY, SEPTEMBER 7, 2023**



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## Mason Libraries - Artificial Intelligence Salon Series

Join Mason Libraries for a series of scholarly discussions regarding artificial intelligence (AI) technologies such as ChatGPT and their effects on higher education and society. They will facilitate open dialog for learning more about this rapidly expanding topic and what it means for Mason and the global community.

# AI Salon Series 2023

- *AI in Business and Government*
  - September 21st, 4pm-5pm
- *AI, Ethics, and Academic Integrity*
  - October 9th, 4pm-5pm
- *AI in the Arts and Humanities*
  - November 15th, 4pm-5pm
- *AI in the Social Sciences and STEM*
  - December 6th, 4pm-5pm

All salons will be moderated by  
Mason librarians and held in the  
Fenwick Library Main Reading Room (Level 2).



For more information, contact Dr. Heidi Blackburn, [hblackbu@gmu.edu](mailto:hblackbu@gmu.edu)

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## How Attention in 2017 Got Us ChatGPT Talk

The 2017 “Attention is All You Need” paper introduced the transformer architecture. In the past six years, interest in the transformer architecture has only grown, and now the capabilities of GPT4 are the subject of frenzied media attention in the popular press as well as research groups at OpenAI, Microsoft, HuggingFace, Argilla, Google, Facebook, and others. The emergence of the transformer architecture heralded the current era of large language models (LLMs). But how do they work? Should you be intimidated by their inner workings? Are they magic? Are they really artificial general intelligence (AGI)? What does each component do?

This talk will briefly walk through each component visually and make them understandable in historical perspective no matter the level of expertise in machine learning (ML). Dr. Kaufhold will make complex Transformer concepts accessible to a broad audience while also incorporating the more relevant themes of deep learning of interest to more advanced ML engineers — the themes that led to its dominance.

Find **Dr. John Kaufhold's** bio [here](#).

Venue: **Mason Square (Van Metre Hall)**

Event date: **September 20, 2023 at 6:00 PM EST**

Register [here](#).

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## 2023 DataTribe Challenge

The DataTribe Challenge is a unique annual competition where startups have a chance at receiving up to \$2 million in seed capital. The Challenge brings together the best entrepreneurs in the world looking to disrupt cybersecurity and data science. DataTribe selects three finalists that split \$20,000 in prize money and one winner that could receive up to \$2 million in seed capital.

Applications deadline: **September 23, 2023**

More information available [here](#).

A promotional banner for the DataTribe Challenge 2023. The background is dark blue with a glowing network pattern. On the left, the text 'DATATRIBE CHALLENGE 2023' is displayed in white and blue. In the center, the text 'WHAT COULD YOUR COMPANY DO WITH \$2 MILLION?' is written in white and large blue font. Below this, it says 'FIND OUT NOW:' followed by a white box containing the URL 'www.datatribe.com/challenge'. On the right, the DataTribe logo (a white square with a black triangle) and the word 'DATATRIBE' are shown.

**DATATRIBE CHALLENGE 2023**

WHAT COULD YOUR COMPANY DO WITH  
**\$2 MILLION?**

FIND OUT NOW: [www.datatribe.com/challenge](http://www.datatribe.com/challenge)

 **DATATRIBE**

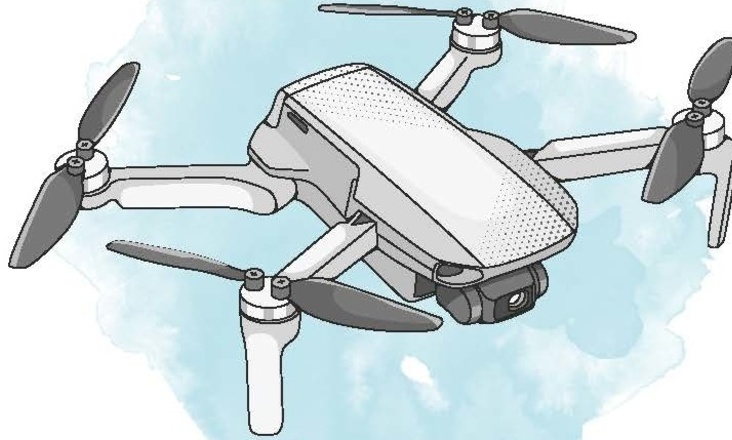
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## Drone Prototyping Short Course Fall 2023



MASON INNOVATION EXCHANGE

# Drone Prototyping Short Course Fall 2023



Do you like problem solving, learning new technology, and making things? Join our Drone Prototyping Workshop series! You will be working in small teams to design, prototype, and pitch a solution to a real-world challenge given by industry partners.

**We are looking for enthusiastic participants from every major!**

Spots are limited- apply today!

**9 week course**

**Thursdays starting September 21**

**4:30-6:30pm**

**Horizon Hall 1408**

**Applications close September 15th**

**Apply Now at [www.mix.gmu.edu/drone](http://www.mix.gmu.edu/drone)**



## Call for Participants “Harnessing the Power of Economics to Solve Whole of Nation Challenges” Conference

Wednesday 6 September 2023, 9:00 am – 4:00 pm EDT  
McLean VA, Bedford MA, and Teams Meeting  
Hosted by The MITRE Corporation

This conference will join MITRE economists with speakers and panelists from government, academia, and industry to examine the role of economics in collaboratively solving whole-of-nation challenges. A Whole of Nation challenge is one in which maximum U.S. societal benefits can only be achieved through partnership across applicable agencies at the federal, state, tribal, territorial, and/or local government levels and/or with academia and/or industry engagement. MITRE seeks to serve as a catalyst to foster collaborative cross-sector research, drive innovation, and inform decision makers. Topics include climate, transportation, supply chain, public health, digital currency, and the economics of AI.

We are currently soliciting submissions of abstracts for poster displays of relevant research. We want to feature a diverse selection of work from MITRE, government, academia, and industry, where economic thought or methods were, or could potentially be applied to problems of national interest. Accepted posters will have to be cleared through the PRS process by the submitters.

We are also providing free lobby space for vendor tables. Government agencies or offices, academic institutions or departments, associated research centers, and industry companies or organizations are welcome to inquire. Tables will be small (one table and two chairs). Tables may be set up in either or both of MITRE’s two main campus locations—in McLean, VA and in Bedford, MA.

To submit an abstract by Friday 4 August 2023, please use this form:

<https://forms.office.com/g/u8ZE8vnutr>

To apply to reserve a table by Friday 18 August 2023, please use this form:

<https://forms.office.com/g/WDL7uAGtJK>

To register to attend the conference (no deadline, no registration fee), please use this form:

<https://forms.office.com/g/DajGwQ9aMS>

For additional questions, or to inquire about participating in speaker sessions, please contact Tony Dziepak: [adziepak@mitre.org](mailto:adziepak@mitre.org)



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## Department of Defense's Energy and Environment Innovation Symposium

The Department of Defense's (DoD) Energy and Environment Innovation Symposium is the nation’s largest conference focusing on the DoD's priority environmental and energy issues. The Symposium will offer a variety of technical sessions and short courses, over 500 technical poster presentations, and networking opportunities at the Crystal Gateway Marriott in Arlington, Virginia.

Event date: **November 28 - December 1, 2023**

Register [here](#).

## VARIOUS OPPORTUNITIES

### National Science Foundation STEM Education

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program.



National Science Foundation

Proposal deadline: **September 27, 2023**

More information available [here](#).

### NVIDIA Graduate Fellowship Program

NVIDIA has long believed that investing in university talent is beneficial to the industry and key to continued growth and success. The NVIDIA Graduate Fellowship Program provides funding in the amount of up to \$60,000 per award to PhD students who are researching topics that will lead to major advances in accelerated computing and its applications. NVIDIA particularly invites submissions from students pushing the envelope in artificial intelligence, robotics, autonomous vehicles, and related fields.



Applications deadline: **September 7, 2023**

More information available [here](#).



# CCI OPPORTUNITIES

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## CCI Hub Call for Proposals - Supply Chain Cybersecurity

CCI seeks proposals for seed research grants that advance the state of the art of Supply Chain Cybersecurity by building capacity and increasing competitiveness.

Proposal deadline: **September 25, 2023 by 5:00 PM EST**

More information available [here](#).

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## CCI Paid cybersecurity Internship opportunity

The objective of this experiential learning opportunity is to encourage students to gain work experience in a tech startup and to familiarize themselves with the world of cyber entrepreneurship, with the hope that one day perhaps, the students can launch their own tech company.

Proposal deadline: **September 8, 2023**

More information and registration available [here](#).

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## CCI Meet Up to Startup at GMU

CCI faculty and student founders are invited to connect and network with leading Virginia venture capitalists at George Mason University's Horizon Hall. This networking opportunity provides students and faculty to share their research, receive feedback, meet, and discover what is top of mind from investors.

Venue: **MIX Room# 2107**

Event Date: **October 18, 2023, from 4:00 PM to 7:00 PM EST**

Register [here](#).



Commonwealth  
Cyber Initiative

MEET UP

to

STARTUP

Where entrepreneurs and  
investors connect



## AWARDS

Congratulations to:

**Parsa, Maryam** from the [College of Engineering and Computing](#) for receiving the US Department of the Army grant on *Automotive Research Center (ARC) A Center for Excellence In Modeling and Simulation of Ground Vehicles Supported by the National Automotive Center.*

**Zeng, Kai** from the [College of Engineering and Computing](#) and Co-PIs **Mark, Brian L.** and **Jiang, Weiwen** for receiving the US Department of the Army grant on *Advanced mmWave Testbed for Wireless Communication Security Research and Education.*

**Jiang, Weiwen** from the [College of Engineering and Computing](#) for receiving the National Science Foundation grant on *CyberTraining: Pilot: Quantum Research Workforce Development on End-to-End Quantum Systems Integration.*

**Shortle, John Friedrich** from the [College of Engineering and Computing](#) for receiving the Federal Aviation Administration grant on *NEXTOR III: DO 21: System Safety Management Transformation (SSMT).*

**Jiang, Weiwen** from the [College of Engineering and Computing](#) and Co-PI Rosenberg, Jessica L. for receiving the National Science Foundation grant on *Collaborative Research: OAC Core: An Integrated Framework for Enabling Temporal-Reliable Quantum Learning on NISQ-era Devices.*

## FUNDING OPPORTUNITIES

[National Science Foundation - Dear Colleague Letter: Design for Sustainability in Computing](#)

Deadline: **Continuous Submission**

[Comcast - Innovation Fund -- General Research Grants](#)

Deadline: **Continuous Submission**

[National Science Foundation - Dear Colleague Letter: UKRI/BBSRC - NSF/BIO Lead Agency Opportunity in Biological Informatics, Systems Understanding of Host-Microbe Interactions, Synthetic Cells and Cellular Systems, and Synthetic Microbial Communities](#)

Deadline: **April 2024**

[National Science Foundation - Trans-Atlantic Platform Call on Democracy, Governance and Trust](#)

Deadline: **September 15, 2023**

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## — IDIA AFFILIATION —

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Did you know that, as an IDIA faculty affiliate, you are eligible to:

Compete for [internally funded IDIA projects](#)

Receive support for [IDIA-relevant events](#)

Become part of the [dynamic multidisciplinary faculty network](#) focused on digital techniques and technologies to advance fields as diverse as finance, education, built infrastructure, science, economics, agriculture, health, transportation, entertainment, national security, and social justice.

There is no financial burden to you or your departments for affiliation with the institute. Participation in IDIA does not prevent its members from being associated with other university centers. If you are not already affiliated, we encourage you to submit your profile [here](#).

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### — SHARE WITH US —

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We are eager to hear from you! As we work with your colleges to compile updates on digital innovation-related research activities at Mason, we would love to hear about your research activities, awards, and recent publications. Please share any successes, concerns, or ideas with us at [idia2@gmu.edu](mailto:idia2@gmu.edu)



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