New York Scientific Data Summit 2025: Powering the Future of Science with Artificial Intelligence

Report of Contributions

https://indico.bnl.gov/e/nysds2025

Contribution ID: **1** Type: **not specified**

Welcome Remarks

Thursday 11 September 2025 09:00 (10 minutes)

Presenter: HILL, John (Brookhaven National Laboratory)

Session Classification: AI Applications I

Contribution ID: **2** Type: **not specified**

MATEY: Multiscale Adaptive Foundation Model for Computational Fluid Dynamics

Friday 12 September 2025 09:30 (20 minutes)

Foundation models hold promise for solving multiscale flows—central to energy generation, earth sciences, and power and propulsion systems—with a single base model. Compared to physics-based simulations, foundation models offer faster solutions and can generalize better across multiple systems than single-purpose AI. However, foundation models for multiscale multiphysics are still in their early stages. Transformer-based architectures, despite exhibiting remarkable scalability, often struggle to capture local features, and extremely high-resolution spatiotemporal data makes tokenization at the finest scale impractical. In this talk, Pei Zhang will present their recent work overcoming these challenges in developing a foundation model for fluid dynamics, featuring three key techniques: adaptive tokenization, hierarchical turbulence transformer, and sequence parallelism.

Presenter: ZHANG, Pei (Oak Ridge National Laboratory)

Session Classification: Generative and Agentic AI III

Contribution ID: **3** Type: **not specified**

Accelerating the Development of Fusion with AI and HPC

Thursday 11 September 2025 09:30 (20 minutes)

Fusion energy promises a clean, virtually limitless power source, but achieving it requires overcoming formidable challenges, including sustaining extreme temperatures and controlling plasma. Computational studies of these problems exceed current High-Performance Computing (HPC) capabilities. Integrating Artificial Intelligence (AI) with HPC offers a scalable pathway to address these barriers. This talk will (1) outline the major intellectual challenges in applying AI to fusion energy and (2) highlight vignettes of progress at the Princeton Plasma Physics Laboratory. These include AI-coupled computational campaigns using surrogates for high-fidelity simulations (e.g., XGC) to enhance speed, stability, and timestep resolution; data-driven predictive models that adapt to real-time experimental data; and Simulation-Based Inference for rapid simulation-to-experiment comparisons. Such approaches enable AI-driven digital twins for autonomous plasma control and inform the design of resilient materials and power plant systems.

Presenter: JHA, Shantenu (Princeton Plasma Physics Laboratory)

Session Classification: AI Applications I

Contribution ID: **4** Type: **not specified**

The Future of Autonomous Physical Science

Thursday 11 September 2025 09:10 (20 minutes)

This talk will discuss the present and future of AI/ML accelerated material discovery, with particular focus on use of x-ray probes of polymeric materials. Autonomous experimentation (AE) based on Bayesian optimization was used to automate x-ray scattering experiments. Several examples of successful autonomous experiments in polymer science will be presented, including the use of AE to discover new nanoscale structures. Finally, we will discuss the intersection of large language models (LLMs) with material discovery; including a vision for future agentic AI workflows for science.

Presenter: YAGER, Kevin (Brookhaven National Laboratory)

Session Classification: AI Applications I

Contribution ID: **5** Type: **not specified**

AI for Biomedical Research

Thursday 11 September 2025 09:50 (20 minutes)

Presenter: KAPADIA, Anuj (Oak Ridge National Laboratory)

Session Classification: AI Applications I

Contribution ID: **6** Type: **not specified**

[Keynote] Empire AI

Thursday 11 September 2025 11:00 (30 minutes)

Presenter: HARRISON, Robert (Empire AI)

Session Classification: AI Applications II

Contribution ID: **7** Type: **not specified**

From Algorithms to Action: Deploying AI for Healthy Communities

Thursday 11 September 2025 11:30 (20 minutes)

Scientific advances in Artificial Intelligence are rapidly accelerating, but translating these innovations into real-world health impact requires connecting advances in computation with healthcare and public health models and systems. This talk presents two examples of data-driven solutions being implemented in larger systems. First, we introduce a novel data augmentation method that enhances identification and delineation of greenspaces, particularly in areas with minimal green coverage, which was solicited for a major mega-city's planning processes. Second, we discuss the development of a protocol to assess and improve the performance of off-the-shelf algorithms in a large safety-net health system. Looking ahead, these experiences offer practical strategies and insights for moving from algorithms to action.

Presenter: CHUNARA, Rumi (New York University)

Session Classification: AI Applications II

Contribution ID: **8** Type: **not specified**

ML/AI Opportunities in the Lifecycle of Aircraft Engines

Thursday 11 September 2025 10:10 (20 minutes)

This talk will present the exciting developments associated with the aircraft engine life cycle from design to fleet management specifically highlighting the roles ML/AI play in next generation future of flight.

Presenter: KHAN, Genghis (GE Aerospace)

Session Classification: AI Applications I

Contribution ID: **9** Type: **not specified**

[Keynote] End-to-End Audio Processing: From On-Device Models to LLMs (Remote)

Thursday 11 September 2025 13:00 (30 minutes)

End-to-end (E2E) speech recognition has become a popular research paradigm in recent years, allowing the modular components of a conventional speech recognition system (acoustic model, pronunciation model, language model), to be replaced by one neural network. In this talk, we will discuss a multi-year research journey of E2E modeling for speech recognition at Google. This journey started with building E2E models that can surpass the performance of conventional models across many different quality and latency metrics, as well as the productionization of E2E models for Pixel 4, 5 and 6 phones. We then looked at expanding these models, both in terms of size and language coverage. Towards this, we will touch on the Universal Speech Model, as well as more open-ended audio tasks achievable with large language models (LLMs).

Presenter: SAINATH, Tara (Google)

Session Classification: Generative and Agentic AI I

Contribution ID: **10** Type: **not specified**

From Genome to Theorem: Can LLM Agents Do Science? (Remote)

Thursday 11 September 2025 13:50 (20 minutes)

Large Language Models (LLMs) are increasingly being explored as tools for scientific reasoning —not just in language tasks, but across disciplines such as math, biology, genomics and physics. In this talk, I'll discuss recent developments in AI for science, including genome language models, AI co-scientist for biology and quantum physics, and LLMs for math. I'll highlight both the capabilities and current limitations of LLMs, and discuss key gaps between AI and science such as the overoptimism in AI's capabilities and the lack of benchmark and rigorous evaluation. As we push toward AI systems that can assist with discovery, the question remains: can LLMs truly do science —or are we still in the early stages of bridging that divide?

Presenter: WANG, Mengdi (Princeton University)

Session Classification: Generative and Agentic AI I

Contribution ID: **11** Type: **not specified**

GenBioCELL: Generalizable, Training-Free Biological Image Analysis via Collaborative and Self-Evolving Large Language Model Agents

Friday 12 September 2025 13:50 (20 minutes)

Accurate segmentation of subcellular organelles is a fundamental yet persistent challenge in biological image analysis due to diverse imaging modalities and biological variability. Existing tools and machine learning models are often limited by their specificity, requiring retraining with large, annotated datasets and offering limited adaptability. In response, we introduce a novel, training-free, multi-agent framework driven by large language models (LLMs) to enable flexible, intelligent, and user-friendly biological image analysis. Our system employs autonomous LLM agents—capable of planning, tool selection, execution, and evaluation—to dynamically analyze novel organelles across diverse imaging conditions without manual retraining. Key features include intelligent tool orchestration, robust generalization via vision-language integration and in-context learning, seamless human-in-the-loop interaction, self-evolving memory-based improvement, and personalized workflow optimization. This approach represents a shift from static, task-specific pipelines to adaptive, generalizable, and accessible image analysis in the life sciences.

Presenter: LIN, Yuewei (Brookhaven National Laboratory)

Session Classification: Robotics and Embodied AI I

Contribution ID: **12** Type: **not specified**

(CANCELED) Title TBD

Thursday 11 September 2025 15:00 (20 minutes)

Presenter: FINKEL, Hal (DOE)

Session Classification: Generative and Agentic AI II

Contribution ID: **13** Type: **not specified**

CRAFT in Action: Autonomous Agent Creation, Memory, and Self-Improvement

Thursday 11 September 2025 15:20 (20 minutes)

This talk highlights Emergence AI's progress in three interconnected areas: agents-creating-agents (ACA), agentic memory, and self-improvement. Our ACA work builds autonomous multi-agent systems by having orchestrators that can plan, code, and spawn new agents to tackle complex workflows to analyze both structured and unstructured data at scale. In agentic memory, we've developed architectures that set state-of-the-art results in long-term recall through structured fact extraction and efficient retrieval. Finally, we present recent experiments in self-improvement where agents automatically extract and integrate new knowledge, enabling steady performance gains over time.

Presenter: VEMPATY, Aditya (Emergence AI)

Session Classification: Generative and Agentic AI II

Contribution ID: **14** Type: **not specified**

The Next Frontier of AI: Bridging Digital and Physical Embodiment

Thursday 11 September 2025 14:10 (20 minutes)

Embodied AI is rapidly expanding beyond research labs powering intelligent agents in virtual environments and physical robots in the real world. This convergence is redefining how AI perceives, learns, and acts across both simulated and physical domains. In this talk, we will explore the full continuum of Embodied AI: digital agents operating in complex simulations for training, design, and decision-making, and physical embodiments such as autonomous robots and intelligent machines executing tasks in dynamic real-world environments. Drawing from advancements in multi-agent systems, simulation-to-reality transfer, and cross-modal learning, we will discuss how capabilities developed in the digital world accelerate breakthroughs in robotics and vice versa. We will also examine emerging applications, ecosystem shifts, and the foundational technologies enabling a future where AI can seamlessly operate whether in pixels or in physics.

Presenter: AMIN, Vivan (Microsoft)

Session Classification: Generative and Agentic AI I

Contribution ID: **15** Type: **not specified**

Scaling Earthly AI to Help Children with Speech and Language Service Needs

Friday 12 September 2025 13:30 (20 minutes)

We are standing on the brink of an extraordinary transformation. Artificial intelligence is not just a reshaping technology. It also reshapes possibility. Yet even as this technological renaissance accelerates, our society faces many deep and urgent challenges. For example, nearly 3.4 million children in the U.S. require speech and language services under the Individuals with Disabilities Education Act (IDEA) and are at risk of falling behind in their academic and social-emotional development without timely intervention by Speech and Language Pathologists (SLPs). Unfortunately, there is a significant shortage of SLPs, making it almost impossible for SLPs to provide individualized services for children. Through the recently established National AI Institute for Exceptional Education, we envision a transformative approach to address this challenge. We aim to develop advanced AI technologies to scale SLPs'availability and services. In this talk, I will discuss the rationale behind the Institute's vision, the technical approaches we are taking, and the corresponding research challenges we must overcome. I will contextualize these efforts in an ultimate research goal of transforming the current AI innovation ecosystem to truly democratize AI for a better society. This also opens up new opportunities for collaboration with a broad research community in areas of foundational AI, workload acceleration, system characterization and optimization, and AI automation.

Presenter: XIONG, Jinjun (University of Buffalo)

Session Classification: Robotics and Embodied AI I

Contribution ID: **16** Type: **not specified**

[Keynote] AuroraGPT: A Foundation Model for Science

Friday 12 September 2025 09:00 (30 minutes)

The AuroraGPT initiative at Argonne National Laboratory is aimed at the development and understanding of foundation models, such as large language models, for advancing science. The goal of AuroraGPT is to build the infrastructure and expertise necessary to train, evaluate, and deploy foundation models at scale for scientific research, using DOE's leadership computing resources. This talk will give an overview of AuroraGPT, efforts and accomplishments so far, and plans for the future.

Presenter: THAKUR, Rajeev (Argonne National Laboratory)

Session Classification: Generative and Agentic AI III

Contribution ID: **17** Type: **not specified**

Integrated AI for Science Infrastructure and the Upcoming NERSC ”Doudna” System

Friday 12 September 2025 11:00 (20 minutes)

The upcoming Doudna system at NERSC will be a next-generation supercomputer to support the US Department of Energy, Office for Science's evolving workload. It is designed to support complex workflows combining data movement and analysis, AI and large-scale simulations. This talk will describe lessons learnt from NERSC's current AI for Science workload, as well as emerging directions and trends, and how these drive the technical design of Doudna, including the underlying compute and data infrastructure and plans for advanced workflow capabilities.

Presenter: BHIMJI, Wahid (Lawrence Berkeley National Laboratory)

Session Classification: AI Hardware and Infrastructure

Contribution ID: **18** Type: **not specified**

Can We Trust Our Epistemic Proxies? Observations on Reasoning and the Gullibility of Language Models

Friday 12 September 2025 10:10 (20 minutes)

AI systems increasingly serve as our knowledge-seeking agents, but how reliably can they discern truth from deception? We investigate a counterintuitive finding: language models equipped with reasoning tools, like metacognitive capabilities, transparency mechanisms, structured deliberation, often perform worse at epistemic tasks than their basic counterparts. Through controlled experiments involving latent variable inference via noisy intermediaries, we demonstrate that reasoning augmentations amplify systematic errors when models navigate uncertainty and deception. The very tools meant to enhance cognition become attack surfaces that adversaries can exploit. This reveals social epistemological alignment as a potential third pillar of AI safety, alongside capability and value alignment. The key question: can AI systems navigate contested information landscapes to discern the reliability between information sources? As these models increasingly mediate scientific research and knowledge synthesis, understanding their epistemic vulnerabilities becomes crucial. Our findings suggest fundamental tensions between reasoning sophistication and robustness. The implications extend beyond AI safety: as AI systems mediate increasingly critical knowledge work, epistemic robustness becomes as fundamental as capability and alignment.

Presenters: PRADHAN, Rohan (Amazon Web Services); GOLEY, Steve (Amazon Web Services)

Session Classification: Generative and Agentic AI III

Contribution ID: **20** Type: **not specified**

DISCO: Learning to DISCover an Evolution Operator as a Multi-Physics Foundation Model

Friday 12 September 2025 09:50 (20 minutes)

Presenter: HAN, Jiequn (Flatiron Institute)

Session Classification: Generative and Agentic AI III

Contribution ID: **21** Type: **not specified**

Meeting developers where they’re at; a first principles approach to enabling cross functional teams across software and hardware, from single device to datacenter scale

Friday 12 September 2025 11:20 (20 minutes)

A condensed version of a 90 minute talk, the focus is on how tenstorrent is attempting to minimize the mental context switch required when dealing with various scales of hardware, thinning out software abstractions, and approaching the user community first and foremost to enable them.

Presenter: LECLAIR, Felix (Tenstorrent)

Session Classification: AI Hardware and Infrastructure

Contribution ID: **22** Type: **not specified**

Efficient Programming on Heterogeneous Accelerators

Friday 12 September 2025 11:40 (20 minutes)

In this talk, I will first discuss how new mapping solutions, i.e., composing heterogeneous accelerators within a system-on-chip with both FPGAs and AI tensor cores, achieve orders of magnitude energy efficiency gains when compared to monolithic accelerator mapping designs for deep learning applications. Then, I will apply such novel mapping solutions to show how design space explorations are performed to achieve low-latency AI inference. I will further discuss how we applied these techniques to different application domains, including autonomous vehicles, additive manufacturing, etc.

Presenter: ZHOU, Peipei (Brown University)

Session Classification: AI Hardware and Infrastructure

Contribution ID: **23** Type: **not specified**

[Keynote] Information Lattices and the Future of AI for Creativity and Discovery

Friday 12 September 2025 13:00 (30 minutes)

Artificial intelligence (AI) and the potential emergence of artificial general intelligence (AGI) have important implications in nearly every societal, industrial, and scholarly sector. Existing AI technology –in the form of large language models (LLMs) –has shown great promise, and many in the AI technology and policy worlds argue that LLMs may scale up to AGI in the near future. This talk is intended to complicate that position, explaining why there are barriers to LLMs hyperscaling to AGI, especially for creativity and scientific discovery, and why AGI may instead emerge from a suite of complementary, if not alternative, algorithmic and computing technologies. A particular focus will be on information lattice learning, which is a human-controllable, low-data, and low-compute approach to AI that is based on information-theoretic and group-theoretic foundations.

Presenter: VARSHNEY, Lav (Stony Brook University)

Session Classification: Robotics and Embodied AI I

Contribution ID: **24** Type: **not specified**

Accelerated Science via Autonomous Experimentation

Thursday 11 September 2025 13:30 (20 minutes)

AI systems increasingly serve as our knowledge-seeking agents, but how reliably can they discern truth from deception? We investigate a counterintuitive finding: language models equipped with reasoning tools, like metacognitive capabilities, transparency mechanisms, structured deliberation, often perform worse at epistemic tasks than their basic counterparts. Through controlled experiments involving latent variable inference via noisy intermediaries, we demonstrate that reasoning augmentations amplify systematic errors when models navigate uncertainty and deception. The very tools meant to enhance cognition become attack surfaces that adversaries can exploit. This reveals social epistemological alignment as a potential third pillar of AI safety, alongside capability and value alignment. The key question: can AI systems navigate contested information landscapes to discern the reliability between information sources? As these models increasingly mediate scientific research and knowledge synthesis, understanding their epistemic vulnerabilities becomes crucial. Our findings suggest fundamental tensions between reasoning sophistication and robustness. The implications extend beyond AI safety: as AI systems mediate increasingly critical knowledge work, epistemic robustness becomes as fundamental as capability and alignment.

Presenter: MARUYAMA, Benji (Air Force Research Laboratory)

Session Classification: Generative and Agentic AI I

Contribution ID: **25** Type: **not specified**

Multimodal Video Models for Robot Learning

Friday 12 September 2025 15:40 (20 minutes)

In this talk, we discuss multimodal video models and their importance in robot learning. We first cover multimodal video-language models to capture semantic and motion information over videos. We then talk about how such video models could benefit vision-language-action (VLA) models for robot visuo-motor action policy. VLA models including LLaRA and LangToMo as well as applications of multimodal video-language frameworks like MVU and LVNet for robotics will be covered.

Presenter: RYOO, Michael (Stony Brook University)

Session Classification: Robotics and Embodied AI II

Contribution ID: **26** Type: **not specified**

The Emergence of General Robotic Behavior from an Interpolation Perspective

Friday 12 September 2025 14:10 (20 minutes)

Applications of Machine Learning can give us powerful coding assistants, and rival gold medalists at the International Mathematical Olympiad (IMO). So why don't we have a basic robot butler in every home? In this talk, I will argue that to make progress on this problem we will have to focus on the distinction between interpolation and extrapolation in robotics. Then, I will talk about how to cast the problem of robot learning from humans as an interpolation problem. I will demonstrate a perspective shift from humans to robots –literally –by using handheld tools and an iPhone. I will talk about different approaches that unlock solving problems in novel environments right out of the box following this principle of solving robot problems from the robot perspective. Finally, I will talk about some future challenges that we will have to address, such as dexterity and long horizon, and some potential solutions for such problems.

Presenter: SHAFIULLAH, Mahi (Meta/UC Berkeley)

Session Classification: Robotics and Embodied AI I

Contribution ID: **27** Type: **not specified**

Robotics and Embodied AI at Brookhaven National Lab

Friday 12 September 2025 15:00 (20 minutes)

Presenter: SOTO, Carlos (Brookhaven National Laboratory)

Session Classification: Robotics and Embodied AI II

Contribution ID: **28** Type: **not specified**

Robotic Manipulation: The Final Frontier

Friday 12 September 2025 15:20 (20 minutes)

Like dominos, some of the greatest technical challenges of robotics have fallen one by one: physical safety (2000-2010), computer vision (2010-2015), legged locomotion (2015-2020), and even high-level, semantic intelligence and language processing (2020-2025), have all made leaps previously thought impossible. What's standing between us and the general purpose robot of the future, deployed in manufacturing, logistics, healthcare, services, and even the home? The final frontier is skilled, human-like manipulation, able to perform complex and finicky tasks. In this talk, I will discuss advances in the field of robotic manipulation, spanning hardware and software, from both our lab and others, and talk about implications for the field and its future applications.

Presenter: CIOCARLIE, Matei (Columbia University)

Session Classification: Robotics and Embodied AI II

Contribution ID: **29** Type: **not specified**

Sharpening the Future of Supply Chain: Harnessing the Power of Robotics and Agentic AI (Remote)

Friday 12 September 2025 16:00 (20 minutes)

Physical AI is revolutionizing the supply chain by integrating robotics, agentic AI, and advanced simulations to create smarter, more efficient systems. NVIDIA is at the forefront of this transformation, using its AI-driven platforms to enable intelligent automation in warehouses, distribution centers, and logistics operations. Through innovations in robotic systems and agentic AI, powered by Omniverse for digital twins and cuOpt for optimization, NVIDIA is helping companies streamline operations, reduce costs, and enhance decision-making processes. This presentation explores how NVIDIA's contributions in robotic automation and agentic AI are reshaping the future of supply chain management, driving significant improvements in scalability, agility, and productivity.

Presenter: HAMMADOU, Tarik (NVIDIA)

Session Classification: Robotics and Embodied AI II

Contribution ID: **30** Type: **not specified**

Physics-Informed Machine Learning for Mask Design in Interference Lithography

Thursday 11 September 2025 16:00 (10 minutes)

Presenter: CAO, Chuntian (Brookhaven National Laboratory)

Session Classification: Lightning Talks

Contribution ID: **31** Type: **not specified**

Reinforcement Learning for Humanoid Locomotion in Isaac Lab with VR Evaluation

Thursday 11 September 2025 16:10 (10 minutes)

Presenter: LIN, Jasmin (Brookhaven National Laboratory)

Session Classification: Lightning Talks

Contribution ID: **32** Type: **not specified**

Neural Network Memory Criticality: from Echo State to HiPPO and Beyond

Thursday 11 September 2025 16:20 (10 minutes)

Presenter: COATS, Evan (University of Illinois Urbana-Champaign)

Session Classification: Lightning Talks

Contribution ID: **33** Type: **not specified**

AI-Powered Assistant for Long-Term Access to RHIC Knowledge

Thursday 11 September 2025 16:30 (10 minutes)

Presenter: ATIF, Mohammad (Brookhaven National Lab)

Session Classification: Lightning Talks

Contribution ID: **34** Type: **not specified**

SciAidanBench: Evaluating LLM Scientific Creativity

Thursday 11 September 2025 16:40 (10 minutes)

Presenter: MATHUR, Shray (Brookhaven National Laboratory)

Session Classification: Lightning Talks

Contribution ID: **35** Type: **not specified**

Boundary-Informed Method of Lines for Physics-Informed Neural Networks

Thursday 11 September 2025 16:50 (10 minutes)

Presenter: CEDERHOLM, Maximilian (Stony Brook University)

Session Classification: Lightning Talks

Contribution ID: **36** Type: **not specified**

FM4NPP: A Scaling Foundation Model for Nuclear and Particle Physics

Thursday 11 September 2025 15:40 (20 minutes)

Large language models have revolutionized artificial intelligence by enabling large, generalizable models trained through self-supervision. This paradigm has inspired the development of scientific foundation models (FMs). However, applying this capability to experimental particle physics is challenging due to the sparse, spatially distributed nature of detector data, which differs dramatically from natural language. This work addresses if an FM for particle physics can scale and generalize across diverse tasks. We introduce a new dataset with more than 11 million particle collision events and a suite of downstream tasks and labeled data for evaluation. We propose a novel self-supervised training method for detector data and demonstrate its neural scalability with models that feature up to 188 million parameters. With frozen weights and task-specific adapters, this FM consistently outperforms baseline models across all downstream tasks. The performance also exhibits robust data-efficient adaptation. Further analysis reveals that the representations extracted by the FM are task-agnostic but can be specialized via a single linear mapping for different downstream tasks.

Presenters: PARK, David (Brookhaven National Laboratory); LI, Shuhang (Brookhaven National Laboratory)

Session Classification: Generative and Agentic AI II

Contribution ID: **37** Type: **not specified**

What's next for GenAI/Agentic AI? Current challenges, failure points and risks.

Thursday 11 September 2025 17:00 (30 minutes)

Presenters: KAPADIA, Anuj (Oak Ridge National Laboratory); KHAN, Genghis (GE Aerospace); YAGER, Kevin (Brookhaven National Laboratory); AMIN, Vivan (Microsoft)

Session Classification: Panel Discussion

Contribution ID: **38** Type: **not specified**

Opportunities and Challenges for Robotics and Embodied AI

Friday 12 September 2025 16:20 (30 minutes)

Presenters: SOTO, Carlos (Brookhaven National Laboratory); SHAFIULLAH, Mahi (Meta/UC Berkeley); CIOCARLIE, Matei (Columbia University); RYOO, Michael (Stony Brook University)

Session Classification: Panel Discussion

Contribution ID: **39** Type: **not specified**

Exploring Reinforcement Learning for Optimal Bunch Merge in the AGS

Friday 12 September 2025 10:30 (30 minutes)

Presenter: GAO, Yuan (Brookhaven National Laboratory)

Session Classification: Posters

Contribution ID: **40** Type: **not specified**

Active learning Gaussian process classification for mapping multidimensional phase diagram

Friday 12 September 2025 10:30 (30 minutes)

Presenter: ARYAL, Niraj (Brookhaven National Laboratory)

Session Classification: Posters

Contribution ID: **41** Type: **not specified**

Cohort-level protection and individualized inference in artificial intelligence-based monitoring applications

Friday 12 September 2025 10:30 (30 minutes)

Presenter: SUBEDI, Vishal (University of Maryland Baltimore County)

Session Classification: Posters

Contribution ID: **42** Type: **not specified**

GRU-Based Learning for the Identification of Congestion Protocols in TCP Traffic

Friday 12 September 2025 10:30 (30 minutes)

Presenter: BERGERON, Paul (Marist University)

Session Classification: Posters

Contribution ID: **43** Type: **not specified**

Solving Integer Linear Programs via Decision Space Learning

Friday 12 September 2025 10:30 (30 minutes)

Presenter: ZHANG, Yadong (Vanderbilt University)

Session Classification: Posters

Contribution ID: **44** Type: **not specified**

RelV: A Dynamic Relational Vector Database for Multi-Functional Context Window Optimization

Friday 12 September 2025 10:30 (30 minutes)

Presenter: SPENCER, Maximilian (Binghamton University)

Session Classification: Posters

Contribution ID: **45** Type: **not specified**

Velocity-Inferred Hamiltonian Networks: Symplectic Dynamics from Position-Only Observations

Friday 12 September 2025 10:30 (30 minutes)

Presenter: YU, Claire (Stony Brook University)

Session Classification: Posters

Contribution ID: **46** Type: **not specified**

Physics-Informed Active Learning via Functional Simulated Annealing for Neural Operator

Friday 12 September 2025 10:30 (30 minutes)

Presenter: DING, Albert (Stony Brook University)

Session Classification: Posters

Contribution ID: **47** Type: **not specified**

Scientific Machine Learning for Pulsed Infrared Thermography Nondestructive Evaluation

Friday 12 September 2025 10:30 (30 minutes)

Presenter: HAVEL, Hannah (Argonne National Laboratory)

Session Classification: Posters

Contribution ID: **48** Type: **not specified**

Multi-Agent AI in the Real World

Friday 12 September 2025 10:30 (30 minutes)

Presenter: BANDYOPADHYAY, Saptarashmi (City University of New York)

Session Classification: Posters

Contribution ID: **49** Type: **not specified**

AI-Enhanced Multi-modality Data Processing and Visualization for Scientific Computing and Robotics

Friday 12 September 2025 10:30 (30 minutes)

Presenter: LU, Guoyu (State University of New York at Binghamton)

Session Classification: Posters