LAMARR

INSTITUTE FOR MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

USA DELEGATION TRIP

8th – 12th April, 2024

The Delegates

Prof. Dr.
Jürgen Bajorath
AI in Life Sciences
(virtual)

Prof. Dr.
Lucie Fleck
Natural Language
Processing

Prof. Dr.
Thomas Liebig
Smart City Science

Prof. Dr.
Emmanuel Müller
Trustworthy AI

Dr.
Mirko Bunse
ML for Astrophysics

Dr.
Moritz Roidl
Deputy Managing
Director

Dr.
Amal Saadallah
Explainable ML

Dr.
Charles Welch
Natural Language
Processing

Dr.
Elena Xerxa
AI in Life Sciences

Jorge de Heuvel
Humanoid Robotics

Julian Eßer
Robotics in Logistics

Raphael Fischer
Resource-aware/
Trustworthy ML

Thore Gerlach
Quantum ML

Matthias Jakobs
Explainable ML

Simon Klüttermann
Trustworthy AI

Allison Lahnala
Natural Language
Processing

Sascha Mücke
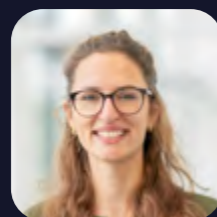Quantum ML

Ann-Kathrin Oster
Networking/PR

Nicole Piontek
Management
Assistance

Jérôme Rutinowski
Trustworthy AI/
Robotics in Logistics

Helen Schneider
AI in Life Sciences

Vanessa Toborek
Natural Language
Processing

Marvin Wiedemann
Robotics in Logistics

About the Lamarr Institute

The Lamarr Institute is a leading research institution for fundamental and applied research on Machine Learning (ML) and Artificial Intelligence (AI) in Germany that already unites over 40 Principal Investigators and their teams at the four partnering institutions TU Dortmund University, University of Bonn and the Fraunhofer Institutes IAIS and IML.

Its five fundamental research areas and five interdisciplinary application areas are interrelated and address questions on how to integrate data, knowledge and context to build AI solutions which operate in a resource-efficient way and deliver powerful yet robust, explainable, ethically responsible and trustworthy results.

The Delegation

As part of the NRW-USA Year 2023/2024, the Lamarr Institute conducted a delegation visit to the United States of America in April 2024. The Lamarr delegation encompassed various thematic foci, including Life and Natural Sciences, Natural Language Processing, Trustworthy AI, Hybrid Machine Learning, Smart City Science, Robotics and Quantum Machine Learning.

Through networking events and working sessions, Lamarr researchers connected and worked together with leading AI experts from the U.S. The goal: Establishing and strengthening substantial scientific cooperation in Artificial Intelligence and Machine Learning and advancing transatlantic relations on forward-thinking technologies.

Work with the Lamarr Institute

Are you or your institution interested in collaborating with us? The Lamarr Institute offers you a wide range of cooperation opportunities, leveraging its far-reaching network of Principal Investigators, Fellows and worldwide partners. Through international visiting researcher programs, like the DAAD's Postdoc-NeT-AI, and individual research stays, you can also work with us directly on-site at any of our four locations.

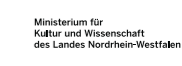Reach out to explore and plan joint research projects on AI:

https://lamarr-institute.org/contact/

Smart Minds meet Smart Machines: AI for Science and the Public Good

8th April, 2024 | German Consulate New York, New York City

Co-organized by the University Alliance (UA) Ruhr and the Lamarr Institute, the Symposium "Smart Minds meet Smart Machines: AI for Science and the Public Good" welcomed the Lamarr delegation as well as experts on Artificial Intelligence and Machine Learning from research institutions at the U.S. American East Coast. The event served as a kick-off to the Lamarr delegation trip.

Fireside Chat:

Moderator Prof. Dr. Nina Gray (New York University) in conversation with Prof. Dr. Lucie Flek (Lamarr Institute), Dr. Thomas Liebig (Lamarr Institute), Prof. Dr. Emmanuel Müller (Lamarr Institute), Prof. Dr. Felix Heide (Princeton University), Prof. Dr. Smaranda Muresan (Columbia University) and Dr. Joel R. Tetreault (Dataminr) on the current challenges of our time. A video of the Fireside Chat is available online.

Scientific Spotlight Talks:

"Differential Privacy: Foundations, Applications and Policy" – Prof. Dr. Rachel Cummings (Columbia University)

"Lifelong and Human-like Learning in Foundation Models" – Prof. Dr. Mengye Ren (New York University)

"An open-source, end-to-end AI framework for research and education" – Prof. Dr. Christoph M. E. Paus (Massachusetts Institute of Technology)

"Giving a Voice to Your Graph: Data Representations in the LLM Age" – Dr. Bryan Perozzi (Google Research)

The event drew widespread interest from AI scientists on the East Coast and welcomed **Guests** from Stony Brook University, Yale University, Rutgers University, DFG, Hasso-Plattner-Institut, JP Morgen Chase, John Hopkins University, DAAD, DWIH, German-American Chamber of Commerce, Latent AI, Bloomberg among others.

The Lamarr Institute meets Pittsburgh

9th April, 2024 | Pittsburgh, Pennsylvania

Organized by the Economic Development Group of the Pittsburgh Region/the Allegheny Conference on Community Development, the Lamarr delegation met with leading experts for Artificial Intelligence from Pittsburgh during a tour of the city's AI ecosystem. Here, they discussed the various foci of AI research and transfer into business while exploring the manifold opportunities for joint collaboration.

Tour of the AI ecosystem of Pittsburgh:

Pittsburgh region and AI ecosystem - Cody Gill (Pittsburgh Region)

Department of Statistics and Data Science – Prof. Dr. Rebecca Nugent (Carnegie Mellon University)

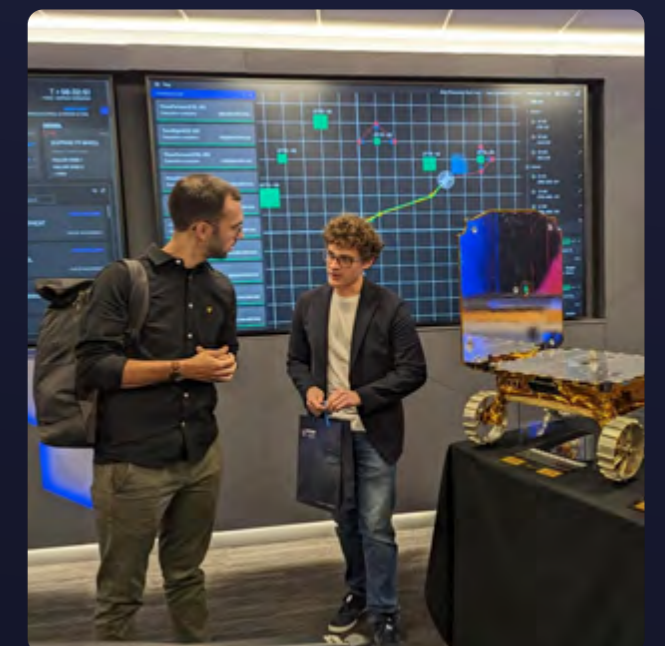School of Computer Science – Prof. Dr. Rita Singh (Carnegie Mellon University)

The Robotics Institute – Prof. Dr. Matthew Johnson-Roberson (Carnegie Mellon University)

Mission Control – Nikolai Stefanov (Carnegie Mellon University)

Mill-19 and the ARM Institute – Matt Rosenberger (ARM Institute - Advanced Robotics for Manufacturing)

Reception:

At an evening reception, representatives from the greater Pittsburgh region's academia, industry and civil society welcomed the Lamarr Delegation. The many discussions on site emphasized the similarities of historic and current developments between the Pittsburgh region and the German federal state of North Rhine-Westphalia. The attendees were in agreement that the two leading AI ecosystems offer rich possibilities for joint cooperation, learning and advancement in present and future times.

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Scientific Working Sessions

10th April, 2024
PITTSBURGH, PA

Carnegie Mellon University
Scientific Working Sessions: Life Sciences (Pharmaceutical Research), Natural Language Processing, Trustworthy AI, Robotics, Quantum Machine Learning

University of Pittsburgh
Scientific Working Sessions: Life Sciences (Medical Imaging), Hybrid Machine Learning/Smart City Science

11th April, 2024
YORKTOWN HEIGHTS, NY

IBM Research
Scientific Working Sessions: Life Sciences (Medical Imaging), Quantum Machine Learning

PHILADELPHIA, PA

University of Pennsylvania
Scientific Working Sessions: Natural Language Processing, Robotics

ST. LOUIS, MO

University of Washington in St. Louis
Scientific Working Sessions: Hybrid Machine Learning/Smart City Science

12th April, 2024
NEW YORK CITY, NY

Columbia University
Scientific Working Sessions: Life Sciences (Medical Imaging)

NEW YORK CITY, NY

IBM Quantum
Lab Visit: Quantum Machine Learning

ITHACA, NY

Cornell University
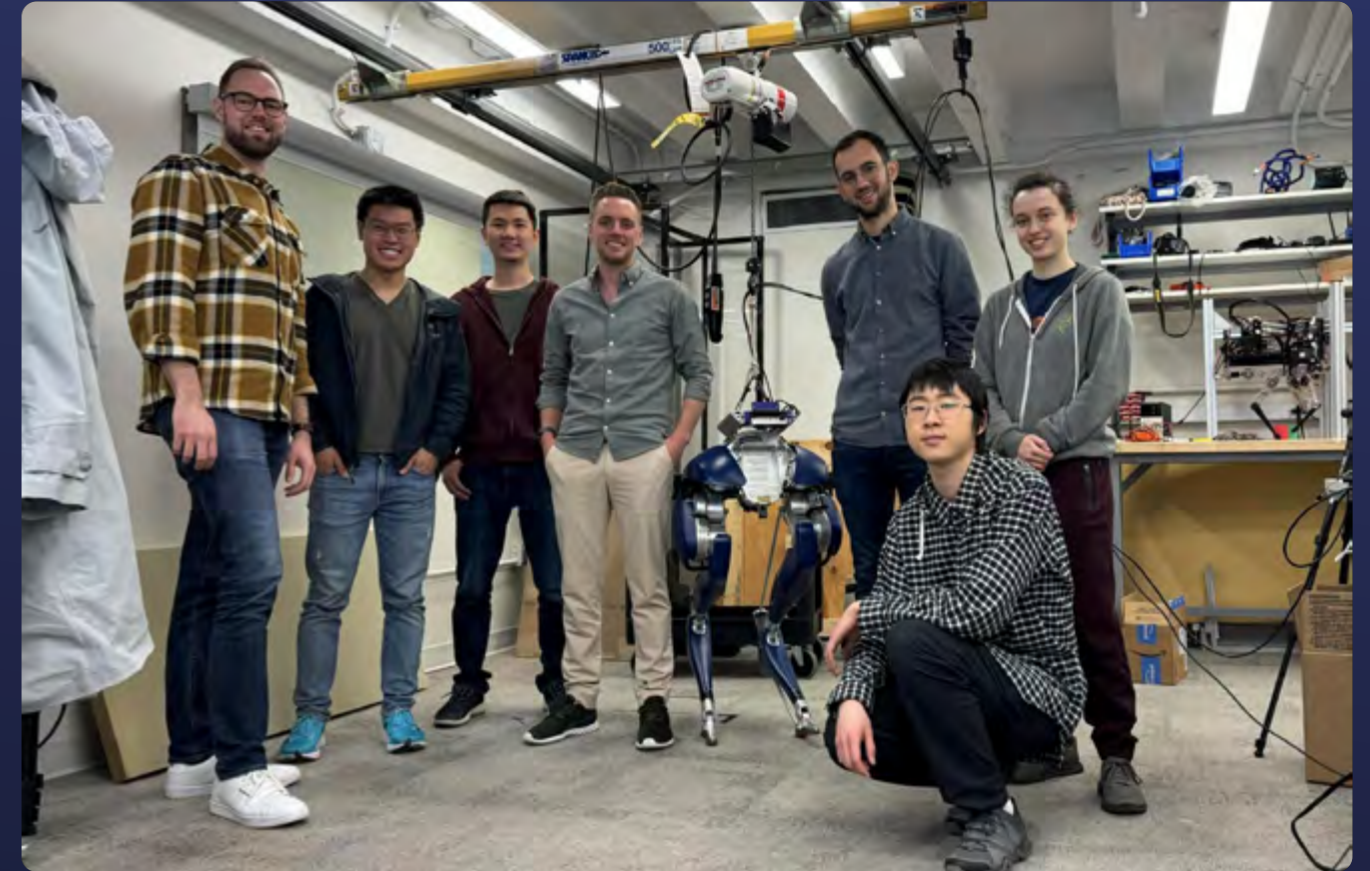Scientific Working Sessions: Life Sciences (Pharmaceutical Research)

PHILADELPHIA, PA

University of Pennsylvania
Scientific Working Sessions: Natural Language Processing, Robotics

ST. LOUIS, MO

University of Washington in St. Louis
Scientific Working Sessions: Hybrid Machine Learning/Smart City Science

Preliminary Results and Successes

Scientific Cooperation

During representative networking events as well as in-depth scientific discussions, lab visits, 1:1 meetings and plenaries, scientists from the Lamarr Institute and U.S. research institutions settled on many plans for joint research endeavors, for example:

▶ Co-application for Dagstuhl Seminar
▶ Joint bilateral project proposals
▶ Joint research papers
▶ Joint supervision of Bachelor and Master theses
▶ Invitations for talks of Lamarr scientists at leading U.S. universities
▶ Mobility of researchers and students: Mutual visiting research stays

Visibility

The Lamarr delegation visit generated high visibility for the Lamarr Institute and AI research from North Rhine-Westphalia (NRW) and Germany. Lamarr scientists were hereby welcomed by prestigious research groups. The resulting visibility was underlined by:

▶ Large attendance at the highly-publicized delegation events
▶ High number of invitations to in-person meetings at U.S. research institutions
▶ Participation by Lamarr's Lucie Flek in a delegation trip of NRW's Minister President Hendrik Wüst
▶ High reach of extensive Social Media coverage of the delegation visit

Fostering of Young Researchers

In line with its commitment to fostering the next generation of AI researchers, the USA delegation visit provided a framework to support young Lamarr scientists in the building of their research network. As Lamarr ambassadors, the delegates played a vital role in representing the Lamarr Institute at the various stops of the delegation visit.

Speaker Acquisition for the conference "AI24 by Lamarr Institute"

The Lamarr delegation succeeded in acquiring several leading U.S. experts as speakers for this year's conference "AI24 by Lamarr Institute". The conference, which is set to take place on September 4-5, 2024 in Dortmund, will for example welcome Prof. Dr. Rebecca Nugent (Carnegie Mellon University) as a keynote speaker. Professor Nugent will be part of a delegation of scientific and business representatives from Pittsburgh to visit Dortmund for the AI24 conference.

Contact

The organizers of the Lamarr Institute's USA delegation trip are happy to answer your questions. To that end, please contact:

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