



AI Institute for Advances in Optimization

The AI4OPT Newsletter | November 2025



Four years ago, AI4OPT launched with a bold vision: to redefine how AI and optimization shape our world. Today, that vision is a thriving reality. As we celebrate this milestone, I wanted to take a moment to reflect and share some key statistics and achievements that highlight how far we've come.

Research is at the heart of AI4OPT. The institute currently supports more than 60 active research projects involving more than 90 faculty members and Ph.D. students. We've become known for our close collaborations with industry, identifying real-world challenges that inspire foundational advances. One of our signature contributions, "[optimization proxies](#)", uses AI to enable real-time optimization of large-scale systems, from power grids to supply chains. Collectively, AI4OPT researchers have authored [over 300 papers](#), received more than 4,000 citations, delivered over 60 keynotes and plenaries, and earned more than 80 awards and recognitions.

Our industrial partnership program has grown to include more than 20 organizations, including joint research labs with Kinaxis and Los Alamos National Laboratory. Companies like Intel, Keysight, Kinaxis, Union Pacific, and UPS have implemented AI4OPT research, and several technology transfers are underway to transform how power grids and supply chains operate across the country. Our annual [TechFest](#)

continues to connect academics and practitioners, and for the first time this year, industry funding surpassed federal funding; an exciting milestone for our use-inspired mission.

We've also made tremendous strides in democratizing access to AI and optimization. Our educational programs—including the Seth Bonder high school camps, Faculty Training Program, community college faculty workshops, and the new AI High School Teacher Cohort—have directly impacted nearly 3,000 students. New AI programs have launched at institutions like Texas Southern University and Moreno Valley College. We've secured over \$6 million in additional funding for education, including major grants with Clark Atlanta University and the University of Texas Rio Grande Valley.

AI4OPT has truly become a nexus for AI and optimization. We've connected with more than 50 organizations, ranging from companies and research labs to schools and nonprofits. Our academic reach includes high-profile plenaries at EURO 2024 and INFORMS 2025, attended by thousands. On the policy front, we've participated in three national AI events hosted by the [White House](#), [Congress](#), and the [Senate](#), contributed to [Georgia's AI Strategy](#), and welcomed staffers and elected officials to campus. Thousands of students and parents have engaged with us through showcases and library events. Our seminar series has hosted over 50 talks, with more than 23,000 views on YouTube.

As we enter our fifth year, our goal is to build on this momentum and further scale our impact across academia, industry, and education. This newsletter offers many examples of how we're doing just that. It also spotlights Dan Molzahn, who plays a major role in our research on power systems and responsible AI, and Asal Roudbari, who recently represented AI4OPT at the Summit for AI Institutes Leadership.

Congratulations to everyone on four years of progress. Let's keep pushing forward.

- Pascal Van Hentenryck

AI4OPT Student Spotlight



My name is Asal Roudbari, and I'm a second-year PhD student in Machine Learning with the H. Milton Stewart School of Industrial and Systems Engineering. I'm also a proud member of the AI4OPT Student Council, where I have the opportunity to contribute to our vibrant research community.

Exploring the Intersection of AI and Healthcare

My research sits at the exciting intersection of AI and healthcare. Currently, I'm working on a project focused on adolescent idiopathic scoliosis in collaboration with

the amazing team at Shriners Hospitals for Children. Our goal is to develop more personalized risk assessment tools and decision-making guidance for clinicians.

What makes this work particularly challenging and meaningful is that we're considering the temporal impact of longitudinal visits on our ability to predict future outcomes using a real-world, irregular dataset.

Why This Work Matters

This research matters deeply to me because it has the potential to help clinicians decide more quickly and help children receive better, faster treatment—improving their self-esteem during crucial developmental years and saving families significant time and money.

Growing as a Researcher and Leader

Through my role on the AI4OPT Student Council, I had the incredible opportunity to attend the Summit for AI Leadership (SAIL). There, I not only developed valuable leadership skills but also presented my scoliosis research—and was honored to receive the Best Poster Award!

Beyond the Office

I enjoy being alive in all its forms! Sometimes that means baking a pastry and sharing it over tea with friends. Other times, it's boxing at the crack of dawn or simply watching anime while enjoying good food. Nature, movement, and food always bring me joy.

Words of Inspiration

Two quotes from anime have stayed with me throughout my journey:

From *Naruto*: "If you don't like the hand that fate's dealt you with, fight for a new one."

And from *Fullmetal Alchemist*: "A lesson without pain is meaningless. That's because no one can gain without sacrificing something. But by enduring that pain and overcoming it, he shall obtain a powerful, unmatched heart... a Fullmetal heart."



AI4OPT Member Spotlight



"I am Daniel Molzahn, an Associate Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology. I research optimization and control algorithms to improve the reliability, resilience, efficiency, and equity of electric power systems."

Advancing Energy Innovation and Research

Before joining Georgia Tech, I worked as a research staff member in the Center for Energy, Environmental, and Economic Systems Analysis at Argonne National Laboratory and as a Dow Postdoctoral Fellow in Sustainability at the University of Michigan. I earned my bachelor's, master's, and doctoral degrees in electrical engineering, as well as a master's in public affairs, from the University of Wisconsin–Madison, where I was an NSF Graduate Research Fellow.

At Georgia Tech, I'm a fellow of the Strategic Energy Institute and the Energy Policy and Innovation Center, and I serve as faculty advisor for the student Energy Club. I've also held leadership roles with the Power Systems Computation Conference and currently serve as secretary of its Executive Board. My team placed second in the Department of Energy's ARPA-E Grid Optimization Competition in 2020. I've been honored with several teaching and research awards, including Georgia Tech's Outstanding Teacher Award in 2024, the Roger P. Webb ECE Junior Faculty Award in 2023, the NSF CAREER Award in 2022, and the IEEE Power and Energy Society's Outstanding Young Engineer Award in 2021.

In AI4OPT, I help lead the Energy Systems Use Case and the Responsible AI for Decision Making thrust.

Contributions to AI4OPT

Since my graduate studies, my research has focused on the intersection of electric power systems and optimization. I was fortunate to work with many of the researchers in AI4OPT, such as Pascal, for several years prior to the start of AI4OPT and found the institute to be a great way to continue this work and build new collaborations. Within the institute, I am working on distributed optimization for power grids, better managing extreme events to improve power grid resilience, and incorporating fairness considerations in power systems operations and planning problems. With other experts in ethics, I am also helping to develop a framework for ethical considerations in optimization of networked systems.



Life Beyond the Office

My main passions outside of work are enjoying the outdoors, especially hiking in national parks and waterskiing and paddle boarding on lakes in the Wisconsin Northwoods. Also, as a shareholder of the world's greatest sporting franchise, I need to keep an eye on my investment and therefore watch and attend football games of the 13-time-champion Green Bay Packers football team.

Words to Learn By

I will somewhat cheat by taking a quote from Pete Sauer (my PhD advisor's advisor) who I very much respect and unfortunately passed away recently. Pete had a quote that is commonly repeated in the power systems engineering community: "Students are candles to be lighted, not bottles to be filled" (Pete Sauer, adapted from Plutarch)

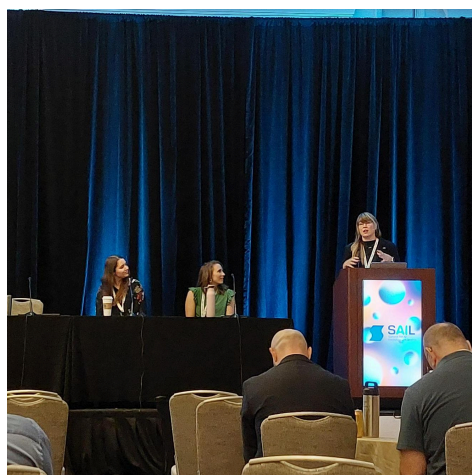
News and Highlights



AI4OPT Showcases Advances in Machine Learning and Optimization at INFORMS



AI4OPT Students Take Charge with New Student-Led AI and Engineering Course



[AI4OPT Contributes to National Dialog on AI at SAIL 2025](#)



[Industry Showcase with THG Advisor Highlights AI Innovations](#)

[HackGwinnett Brings Together 170 Students for Coding and Innovation](#)



[Advancing Collaboration at the 2025 ExpandAI ARISE Meeting](#)



[Cathy Wu Seminar Explores AI's Role in Transforming Transportation](#)



[Kevin Dalmeijer Scheduled to Speak at Georgia Tech-Savannah](#)

Publications

AI4OPT publications available on [Google Scholar](#)

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