

AGENDA

Thursday, September 19, 2024*

7:00 - 8:30 AM	Registration & Check-In
	Grab your badge and a cup of coffee and get ready to join us for two days of learning and networking!
8:30 - 9:15 AM	Welcome Keynote from Gurobi CEO
	Welcome to The Gurobi Decision Intelligence Summit! Hear the latest Gurobi Optimization news and updates from CEO Duke Perrucci.
	General Session
9:15 - 10:00 AM	Optimization 360
	Optimization is all around us—calculating the quickest route on your mobile phone, ensuring timely package deliveries, and streamlining your airline and hotel bookings. Optimization technology is being used in all those situations because it "creates value"— but what exactly does that mean? What's the hidden connection between a deeply mathematical puzzle-solving tool, and your bottom-line results? What is the interplay between complexity and value?
	Speaker: Dr. Cara Touretzky, Technical Account Manager, Gurobi Optimization
	General Session
10:00 - 10:15 AM	Coffee Break & Partner Exhibition
10:15 – 11:15 AM	Partner Keynote – Accenture: The Transition to Tractable

	The optimization market is changing as the compute landscape shifts to emerging technologies. High-performance computing is on the rise as GenAl is pushing widespread GPU and TPU demand. Niche technologies like quantum and neuromorphic are capturing the imagination of the next generation. Classical processors continue to be a work horse for enabling these specialized systems while not losing their edge on critical load types. This new landscape means an inherent change for how decision sciences teams and systems will be incorporated into business. As companies can address larger and more complex challenges, redefining what is tractable, they must also be agile enough to adopt new practices and adapt to the changing landscape. Speaker: Carl Dukatz, Global Quantum Program Lead, Accenture General Session
11:15 AM - 12:00 PM	Advanced Technologies for Optimization: Navigate the Buzzword Jungle (Quantum, GenAI, GPUs)
	Every few years, a new computing technology emerges with the promise to transform the world. Some technologies, like the personal computer, the internet, and the smartphone, have become indispensable tools in our work and personal lives. Others, like the CD-ROM, had limited impact. Here, we consider three emerging technologies that may transform optimization: GPU computing, Generative AI, and Quantum Computing. We will learn how each may potentially benefit optimization, and whether they are likely to become the next big thing or merely a footnote in computing.
	Speaker: Dr. Gregory Glockner, VP & Technical Fellow, Gurobi Optimization General Session
12:00 – 1:00 PM	Networking Lunch & Partner Exhibition
1:00 - 1:45 PM	Technical Keynote: Tackling Nonlinearities with Gurobi & Gurobi 12.0 Sneak Peek
	Gurobi can handle a number of nonlinear functions in optimization models. Historically, Gurobi first supported convex quadratic functions in the objective and constraints. With Gurobi 9.0, Gurobi introduced a global solver for non-convex quadratic models and automatic piecewise-linear approximations of common arithmetic functions. Gurobi 11.0 comes with support for the global optimization of models containing univariate nonlinear functions. Here, we will review these features and present our current work for tackling nonlinearities better, including a preview of what's to come in Gurobi 12.0.

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	Speaker: Dr. Ed Klotz, Senior Mathematical Optimization Specialist at Gurobi Optimization
	Technical Track
1:00 – 1:45 PM	Business Keynote: Innovative Analytics for Datapreneurs
	Explore new dimensions of decision intelligence within the context of innovative analytics at the expanding frontier of emerging digital technologies, including the exploding Internet of Things (IoT) market. Business examples and applications will be presented, with a focus on creating business value "at the intelligent edge" from ubiquitous data sources. Specific analytics strategies will also be presented, going beyond predictive and prescriptive analytics (i.e., traditional forecasting and optimization) into novel analytics techniques for data science / Al innovators, business incubators, and startups (i.e., datapreneurs). These novel techniques include sentinel analytics, precursor analytics, and cognitive analytics, all aimed at delivering mission-critical Insights-as-a-Service (IaaS) to rocket-boost your organization's forecasting and optimization (decision intelligence) capabilities. As a matter of fact, I am a rocket scientist.
	Speaker: Kirk D. Borne, Founder, Data Leadership Group
	Duainaga Traek
	Business Track
1:45 - 2:15 PM	Optimization at Department of Energy (DOE): How Mathematical Optimization is Helping to Reduce Methane Emissions Across Oil & Gas
	The U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) is developing a portfolio of software tools to help reduce methane emissions from oil and gas operations. These tools are designed to make recommendations about (1) which wells to target for "retirement" (known as permanent "plugging" in the industry), (2) how to make best use of precious well characterization and emissions quantification resources, and ultimately (3) how to design and execute efficient and impactful well plugging campaigns.
	This talk will provide an example of one such optimization tool that NETL has developed to help guide emissions mitigation efforts across the oil and gas sector and highlight why mathematical optimization is particularly suitable for meeting the technical and non-technical needs of decision-makers.
	Speaker: Dr. Markus G. Drouven, Technical Director, National Methane Emissions Reduction Initiative, U.S. Department of Energy, National Energy Technology Laboratory

	Technical Track, Case Study
1:45 - 2:15 PM	Suzano: Integrated Decision Systems in the Pulp and Paper Industry
	In the dynamic and competitive pulp and paper industry, integrated decision systems are crucial for companies looking to run efficient supply chain operations and establish a solid market position. These systems can assist decisions at several granularity levels, reducing costs and improving overall performance. At Suzano S.A., the in-house data team created the Pulp Planning Portal with these objectives in mind, applying advanced analytical methods and tools, and leveraging numerical optimization models to assist operations across strategic, tactical, and operational levels.
	Join us to explore the journey from conceptualization to implementation of these decision systems and discover the tangible benefits they bring to the industry.
	Speaker: Bruno Scalia C. F. Leite, Senior Data Scientist, Suzano
	Business Track, Technical Case Study
2:15 - 2:45 PM	BrightNight: Transforming the Design and Operation of Hybrid Renewable Power Projects
	As the energy industry targets greater sustainability and reliability, advanced decision-making tools are becoming increasingly essential. This presentation examines the role of optimization tools in the renewable energy sector, focusing on how BrightNight's PowerAlpha platform, powered by Gurobi's optimization engine, transforms the design and operation of hybrid renewable power projects.
	We'll explore case studies that highlight how PowerAlpha optimizes solar and storage systems, delivering reliable power to data centers while achieving significant cost savings.
	Speaker: Mohit Aggarwal, Director of Asset Optimization, BrightNight Technical Track, Customer Case Study
2:15 - 2:45 PM	Georgia-Pacific: Harnessing the Power of Optimization, Causal AI, and Automated Reasoning to Solve Complex Business Problems

	In this presentation, we'll explore the transformative potential of combining causal AI, automated reasoning, and advanced optimization to tackle complex business problems. We'll delve into how cutting-edge optimization techniques, integrated with causal AI, drive improved decision-making, operational efficiency, and business growth. Attendees will gain insights into practical applications that illustrate how these technologies empower organizations to solve intricate challenges, improve profitability, and stay competitive in a dynamic market landscape. Speaker: Ron Norris, Director of Innovation, Georgia-Pacific Business Track, Customer Case Study
2:45 - 3:00 PM	Coffee Break & Partner Exhibition
3:00 - 3:30 PM	C3.ai: Transforming Manufacturing with AI-Powered Optimization
	Artificial Intelligence is rapidly transforming industry and manufacturing. At C3.ai, we provide AI-based applications to enable this transformation. Here, we will highlight our recent success in providing an optimization application for sugar manufacturing that offers hourly AI-optimized recommendations to operators. The presentation will cover our dual approach of machine learning paired with Gurobi-powered optimization.
	Speakers: Brett Stewart, Al Solutions Director, and Suman Tripathy, Lead Data Scientist, C3.ai
	Technical Track, Customer Case Study
3:00 – 3:30 PM	Toyota: Enhancing Resilience and Agility - Toyota's Optimized Response to Post-Pandemic Supply Chain Challenges
	The automotive industry faced unprecedented supply chain disruptions following the Covid-19 pandemic, impacting production and delivery across the sector. In this presentation, we will showcase how Toyota developed and leveraged optimization techniques to dynamically update its production plans and enhance supply chain resilience and adaptability. We will also discuss how we extended these capabilities to meet evolving customer demands as part of our broader supply chain and fulfillment transformation efforts. Attendees will gain insights into the practical application of optimization in navigating complex supply chain scenarios and adapting to a rapidly changing market landscape.
	Speaker: Priyanshu Mutreja, Senior Principal Engineer, Toyota Motor North America
	Business Track, Customer Case Study

3:30 - 4:00 PM	Pfizer: Optimized Manufacturing: A Recipe for Success In the competitive world of manufacturing, companies must work to
	continuously improve their processes to maintain an edge. This presentation will explore the intricacies of optimizing a drug manufacturing process through the lens of baking a cake. We will discuss the trade-offs between different objective functions, the challenges of adoption, and the importance of a tangible and actionable solution. Join us as we showcase the transformative power of optimization in manufacturing, where strategic planning meets innovative technology to create a streamlined, cost-effective production process.
	Speakers: Caroline Daugherty, Data Translator and Abby Garrett, Lead Data Translator, at Pfizer
	Technical Track, Customer Case Study
3:30 - 4:00 PM	Optimizing Freight Logistics: Decision Intelligence in Action with Gurobi at ABC Supply
	In this session we will showcase how our Dispatch Advisor tool utilizes sophisticated optimization techniques to tackle the challenges of truck routing and load optimization. By combining cutting-edge algorithms with real-world applicability, we simplify the creation of daily outbound schedules and enhance both decision-making and operational efficiency. We'll explore how our tool automates the identification of cost-effective loading and routing strategies, leading to reduced transportation costs and faster scheduling. Attendees will gain valuable insights into how these technologies can solve complex logistics problems and drive significant improvements in supply chain management.
	Speakers: Gourav Gupta, Senior Data Scientist, and Prashanth Devireddy, Senior Data Scientist, at ABC Supply Co., Inc.
	Technical Track, Customer Case Study
4:00 - 4:15 PM	Coffee Break & Partner Exhibition
4:15 – 5:00 PM	Keynote: NVIDIA - Breaking Barriers in AI & the Modern Data Center with NVIDIA Grace Architectures
	NVIDIA Grace™ is a groundbreaking Arm® CPU platform with uncompromising performance and efficiency. Discover how the NVIDIA

	Grace Family is revolutionizing the enterprise data center when paired with NVIDIA GPUs, such as the accelerated NVIDIA Grace Hopper Superchip, which delivers breakthroughs AI at scale, or as a standalone CPU for leading efficiency and scalability across the rest of the data center. Leverage a robust ecosystem of Arm solutions, OEMs, ISVs and system integrators to reduce your carbon footprint and transform your organization's compute capabilities with a trusted, end-to-end solution.
	Speaker: Ian Finder, Group Product Manager, Accelerated Computing at NVIDIA General Session
5:00 - 5:15 PM	Day 1 Closing Remarks
5:15 - 6:00 PM	Break
6:00 - 7:00 PM	Networking Reception
7:00 – 9:00 PM	Dinner & Partner Exhibition

Friday, September 20, 2024

7:30 - 8:30 AM	Day 2: Welcome & Coffee
8:30 - 9:30 AM	Customer Keynote: A Fireside Chat with the National Football League (NFL)

	Hear from the NFL about how they used optimization to tackle the League's toughest scheduling problems. Speaker: Mike North, VP of Broadcast Planning, and Charlotte Carey, Director of Broadcasting at NFL General Session
9:30 AM - 2:45 PM	Journey Mapping Sessions
	Our Journey Mapping sessions are for those just getting started with optimization or looking for advice on their path to greater adoption within their organization. Schedule your session upon registering for the Summit.
8:30 AM - 2:45 PM	Technical 1:1s
	Development and Expert team members will meet with you to discuss your most pressing pain points. Schedule your session upon registering for the Summit.
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9:30 – 10:30 AM	your most pressing pain points. Schedule your session upon registering for the Summit. Hands-On: Burrito Game Play – Optimization in Action In this session, we'll introduce you to the Burrito Optimization Game

9:30 - 10:30 AM	Optimization Crash Course This session will introduce you to the importance and fundamentals of mathematical optimization (MO) through hands-on examples. You'll learn how MO differs from other methods in AI, how it aids in decision-making by translating predictions into actionable solutions, and why it's an indispensable addition to your professional toolkit. After this session, you'll be able to identify the essential building blocks of optimization models, in business problems; decision variables, constraints, and
	models. in business problems: decision variables, constraints, and objective functions. Speaker: Jerry Yurchisin, Data Science Strategist at Gurobi Optimization Beginners Track
9:30 - 10:30 AM	Are you aware of all the useful features Gurobi has to offer? In this session, we will review modeling features such as multiple objectives, multiple scenarios, solution pools, and general constraints. We'll also present features that can help you analyze infeasibility, along with tools designed to analyze and improve Gurobi's performance on your models. Advanced Track
10:30 - 10:45 AM	Coffee Break & Partner Exhibition

10:45 - 11:15 AM

Aimpoint Digital: Integrated Decision-Making in Databricks: How to Foster Collaboration via a Single Platform

Developers of custom decision-support tools often face the challenge of navigating multiple platforms tailored to specific analytics methodologies. As a result, optimization, ML, and simulation models tend to live in their preferred platform based on a natural division, which makes it challenging for users to interpret and reconcile the recommendations from these various models. Gurobi's APIs, available in multiple programming languages, provide a great opportunity to integrate optimization solutions in a variety of modern data warehouses and cloud architectures.

In this talk, we'll demonstrate the benefits of Databricks through a network optimization example. Using this approach, we can streamline forecasting, optimization, and scenario analysis in a unifying platform, which can help foster better collaboration across teams with various analytics capabilities, and ultimately accelerate time-to-value in complex decision-making.

Speakers: Dr. Jay Foraker, Lead Data Scientist at Aimpoint Digital and Yash Puranik, Principal Data Scientist at Aimpoint Digital

Business Leaders Track, Partner Presentation

10:45 - 11:45 AM

If You Can Model It, You Can Optimize It

You already have in-depth knowledge of your business challenges, likely supported by code and conditional statements that define your business rules and established specifications. Additionally, you have regression and machine learning models that provide predictions and address more intricate aspects of your business. By converting these existing representations into optimization frameworks, we'll show you how to translate your predictive models into decision-making tools, embracing the principle that if you can model it, you can optimize it.

Speaker: Jerry Yurchisin, Data Science Strategist at Gurobi Optimization

Beginners Track

10:45 - 11:45 AM

Handling Challenging Models

Finding an optimal solution can be quite challenging for some models. In this session, we discuss potential reasons for this, as well as strategies for finding better solutions. We will also demonstrate a few techniques that can help determine why some models are infeasible

11:45 AM - 12:45 PM 12:45 - 1:15 PM	Networking Lunch & Partner Exhibition BITKA Analytics - Beyond Planning: Leveraging Optimization Systems for Real-World Supply Chain Success In today's competitive landscape, optimizing business processes is crucial for success. This presentation explores the power of Supply Chain Optimization Systems (SCOS), leveraging mathematical optimization to improve planning and operations. We'll delve into the key factors for identifying business challenges ripe for SCOS application, using the real-world case study of Vale, a leading Brazilian mining company. Speaker: Marcelo Reis, Optimization Director, BITKA Analytics
	By addressing potential issues early, agile reduces risk and improves overall model quality. Through engaging case studies, we'll demonstrate how these benefits have been realized in actual projects, showcasing the success of agile for optimization in delivering robust and efficient solutions. Speaker: Patricia Randall, Director at Princeton Consultants Business Leaders Track, Partner Presentation
11:15 - 11:45 AM	Princeton Consultants - Don't Go Chasing Waterfall: Embracing "Agile for Optimization" to Transform Your Model Development Process Imagine a project where issues are identified early, users are engaged and excited, and valuable results are delivered rapidly. In this talk, we'll explore how adopting a customized agile methodology, specifically tailored for optimization models, can revolutionize the models' development compared to the traditional waterfall approach.
	and offer insights into the geometry of MIP to better understand the difficulty of models. Finally, we will discuss heuristics included in the solver and other general concepts. Speaker: Dr. Gregory Glockner, VP & Technical Fellow, and Dr. Rodrigo Fuentes, Senior Technical Account Manager, Gurobi Optimization Advanced Track

12:45 - 1:45 PM	Modeling with Generative AI
	See the powerful potential and significant risks of using generative AI for modeling. While generative AI can help you get started modeling and coding quickly, it often requires careful oversight. We will walk you through several examples of optimization modeling using generative AI, highlighting key issues that can arise. The session will also cover quality assurance and best practices to ensure reliable and accurate models.
	Speaker: Jerry Yurchisin, Data Science Strategist at Gurobi Optimization
	Beginners Track
12:45 – 1:45 PM	Handling Numerical Challenges
	Models with numerical issues can lead to undesirable results, including slow performance, wrong answers, or inconsistent behavior. When solving a model with numerical issues, tiny changes in the model or machine can make a big difference in the results. In this session, you will learn about Gurobi's guidelines on numerical issues, how to identify them, how they impact your solutions, and most importantly, how you can avoid them.
	Speaker: Dr. Ed Klotz, Senior Mathematical Optimization Specialist at Gurobi Optimization
	Advanced Track
1:15 – 1:45 PM	Nextmv - Accelerating Optimization AI teams with DecisionOps
	The path to delivering useful solutions in operational environments is well trodden, but not always smooth. While decision optimization technology plays a critical role in driving cost savings across industries worldwide, there are tremendous—and often overlooked—gains to be had in streamlining the infrastructure, tooling, and collaboration workflows that make operationalizing said technology more efficient. Similar to how the DevOps movement ignited a transformation in

software development, DecisionOps promises to not only simplify the process of shipping optimization models to production, but also facilitate the scaling and acceleration of model development with buy-in

Speaker: Carolyn Mooney, CEO, and Ryan O'Neil, CTO at Nextmv

Business Leaders Track, Partner Presentation

from stakeholders to ultimately derive more value.

1:45 - 2:45 PM

Partner Roundtables: AMPL, Frontline Solvers, Nextmy, and ORMAE

Bring your questions and get insights and recommendations for your toughest problems from Gurobi partners AMPL, Frontline Solvers, Nextmv, and ORMAE.

AMPL Roundtable: Streamline & Conquer: How Optimization Boosts Efficiency

Streamlining operations and maximizing resource efficiency are essential to business success. This round table, hosted by AMPL Optimization, explores how optimization transforms performance by finding the best solutions to complex problems. Whether it's cutting costs, improving quality, or enhancing services, optimization empowers data-driven decisions for short- and long-term gains. Join us for a dynamic discussion and explore solutions tailored to your operational needs.

Facilitator: Christian Valente, Senior Software Engineer, AMPL

Nextmv Roundtable: Supercharge Your Growth: How Optimization Drives Top-Line Revenue

When optimization technology works well, it can feel magical. But it is not magic. From the modeling framework to the solver, infrastructure, workflows, and individual contributors, decision optimization is a team sport. This means there are opportunities to optimize both within optimization technology stacks and teams in order to drive top-line revenue. This roundtable will explore those opportunities through different lenses: technology choices, algorithm team dynamics and productivity, solution analysis, stakeholder buy-in, cross-disciplinary collaboration, and more. Bring your questions, observations, and personal experiences, and walk away with tangible insights into how you can improve your approach.

Facilitators: Carolyn Mooney and Ryan O'Neil from Nextmv

ORMAE Roundtable: Mitigate Risk, Maximize Results: The Power of Optimization

Many organizations operate across multiple geographies, and for them, a disruption in one corner of a supply chain can sometimes turn into a major risk. For example, their manufacturing may be concentrated at a single location, or they may be dependent upon a single supplier for a critical raw material. Modeling capabilities of optimization can help these organizations identify the best path to demand fulfilment when the weakest link in their supply chain breaks.

	Facilitator: Dr. Amit Garg, Founder and CEO, ORMAE
	Frontline Systems Roundtable: Unleashing Cost Savings Through Business Optimization
	This roundtable will focus on applications of optimization that yield measurable cost savings—an outcome that businesses always want to achieve, but that often becomes urgent in case of a recession or industry slowdown.
	Besides identifying common applications, found across industries, where cost savings can be realized via optimization, we'll discuss the kinds of companies and people who are ideal prospects for an optimization solution. Wherever possible, we'll present concrete use cases and demonstrations, not just abstract ideas, for how we can help customers achieve their goals.
	Facilitator: Daniel Fylstra, Founder and CEO, Frontline Systems
	Business Leaders Track
1:45 - 2:15 PM	Gurobi Learning Resources
	Mathematical optimization is a powerful tool that can help businesses make better decisions, maximize efficiency, and improve outcomes. However, learning the ins and outs of optimization modeling can be a daunting task. That's why we've created a variety of free resources designed to make learning mathematical optimization accessible, engaging, and fun. From interactive games to comprehensive guides, these resources cater to a wide range of learners, including students and data scientists who are new to the world of optimization.
	Speaker: Jerry Yurchisin, Data Science Strategist, Gurobi Optimization
	Beginners Track
1:45 – 2:15 PM	Practical Guidelines for Model Improvement and Reformulation
	In this session, we will share insights and lessons learned from our experience helping Gurobi customers across a wide range of industries adjust their optimization models to improve solver performance and numerical behavior. We will look at the challenges that we see most often in LP, MIP, and MINLP models, and discuss our approach and typical recommendations for addressing them. We will also consider some well-known modeling "rules of thumb" and discuss how applicable they are in 2024.

	Speaker: Dr. Dan Steffy, Optimization Engineer, Gurobi Optimization Advanced Track
2:15 – 2:30 PM	Q&A for Data Scientists
	Beginners Track
2:15 - 2:30 PM	Q&A for Operations Researchers
	Advanced Track
2:30 - 2:45 PM	Coffee Break & Partner Exhibition
2:45 - 3:30 PM	Panel: From Skepticism to Success: Getting Buy-in for Optimization Projects
	Whether they are an OR scientist at a large company, a data scientist at a startup, or an academic faculty member working on research proposals, analytics professionals maximize their impact when they get the right support. A panel of experts will discuss strategies for communicating the value of optimization projects, generating excitement, and getting buy-in from decision-makers and business stakeholders.
	Moderated by Dr. Dan Steffy, Optimization Engineer at Gurobi Optimization
	General Session
3:30 - 3:45 PM	Day 2: Closing Remarks – Wrap-Up and Q&A
	General Session

^{*}Times subject to change.