



**Energy Innovation Summit**  
Modeling Meets Optimization

# Welcome

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# Coming in, what is great about Gurobi?



**Talent**

**Culture**

**Focus**

**Algorithms**

**Infrastructure**

**Expertise**



# Disclaimer

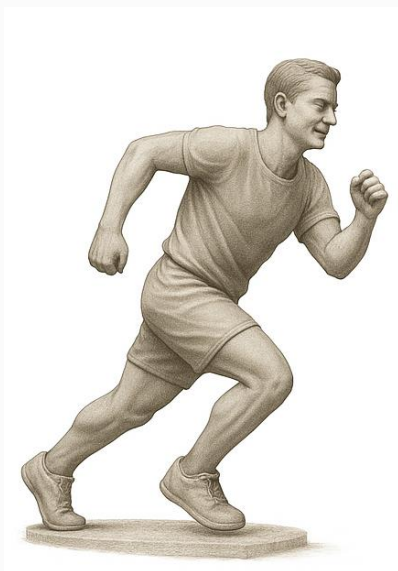


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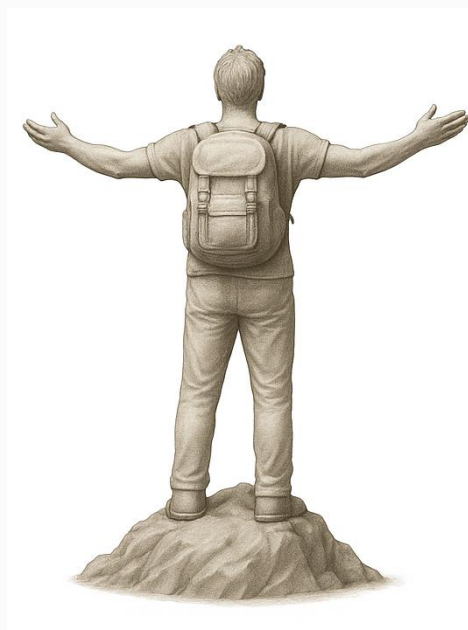


# Optimizer Priorities



## Performance

Out-of-the-box,  
numerically stable and  
scalable



## Breadth

Mixed-Integer and  
Nonlinear and Global  
Optimization



## Depth

Specific modeling  
elements and heuristics



# Gas Networks

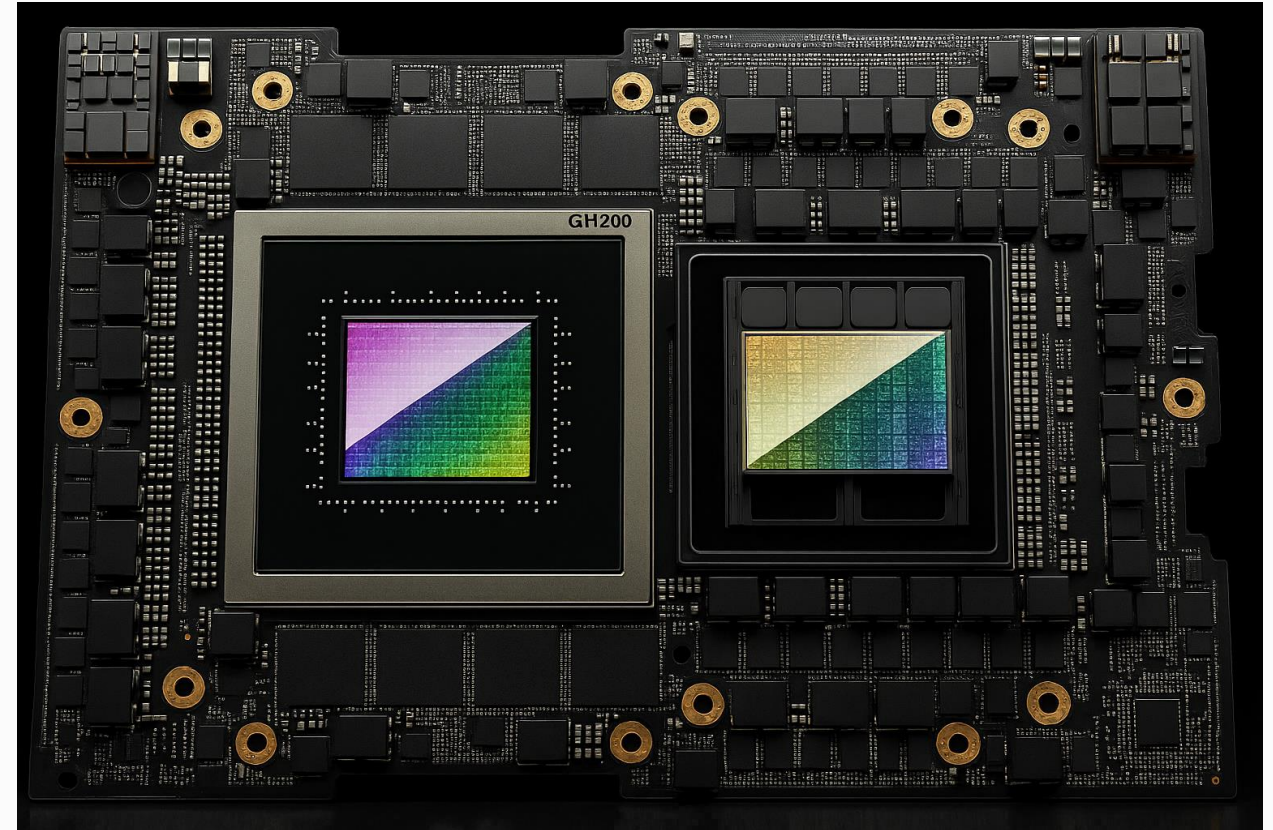
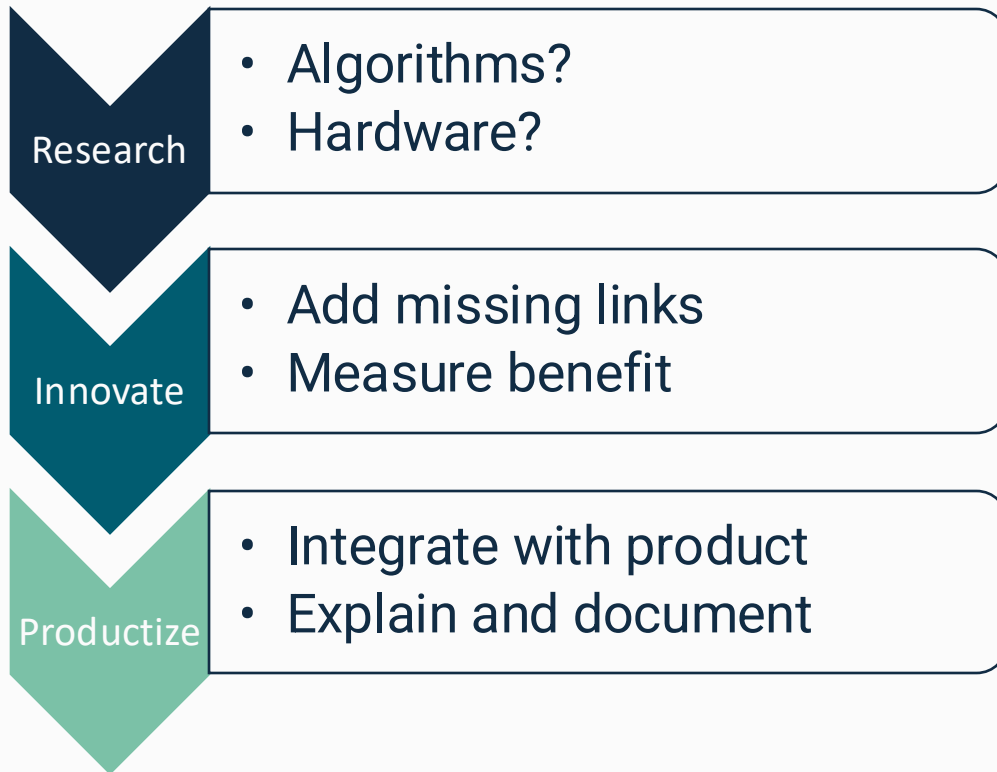
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- OGE wants to repurpose gas pipelines for hydrogen
- Doing The Math developed a capacity planning model which ensures
- Minimal flow curtailments
- Limited pressure load cycles
- Sparse, stable control actions



- Hybrid MINLP Formulation  
Nonlinear for pipe flow physics
  - Sequential Solve Strategy  
MIP -> NL
- 
- Significant enhancements in continuous and mixed-integer nonlinear performance
  - Added signpower() function

# Gurobi & GPU

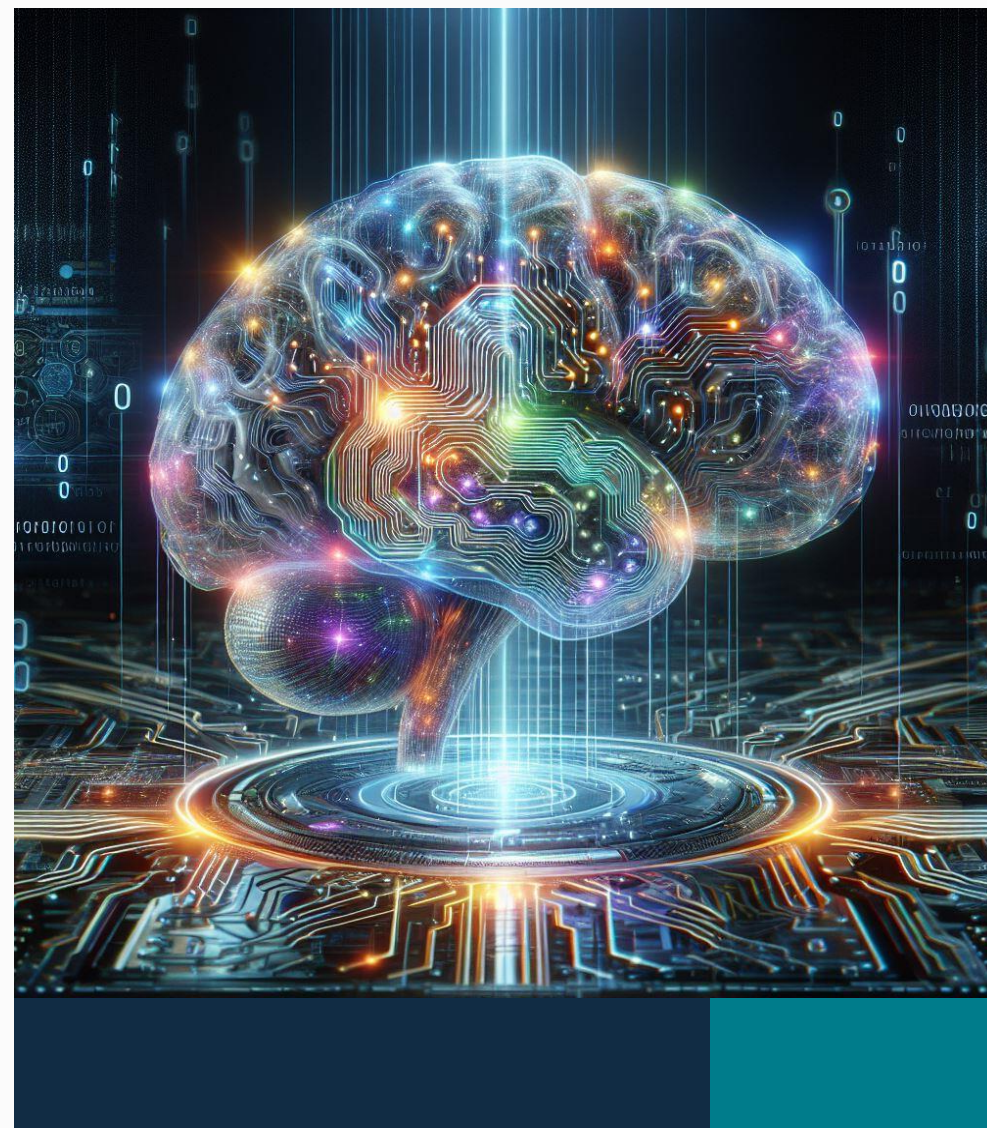




# Gurobot

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Delivers instant, expert-level assistance for its users and marks our first step in making optimization more accessible, interactive, and intelligent through Generative AI.

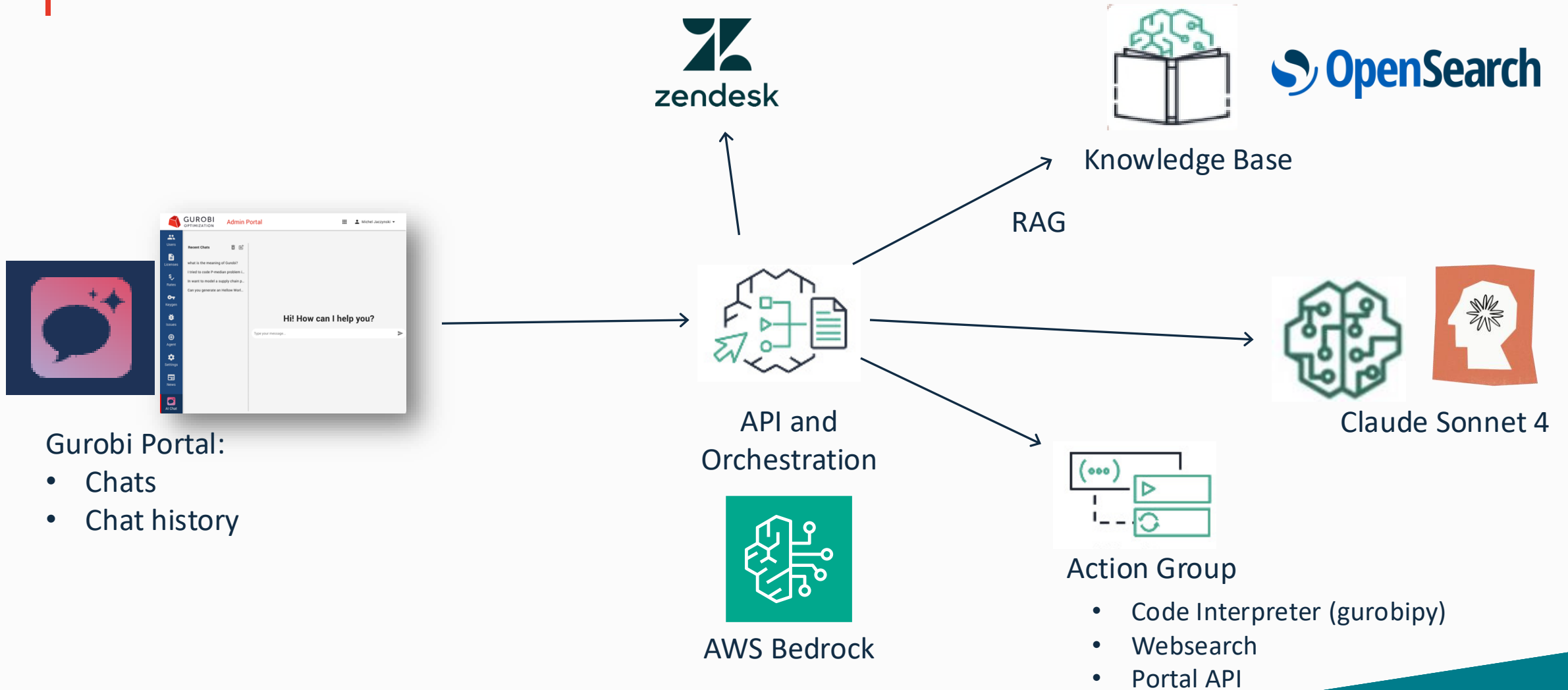




# Key Features

- **Instant Issue Resolution:**
  - Troubleshoot problems as soon as they arise—no need to wait in line.
- **Smart Resource Links:**
  - Get direct links to the most relevant documentation based on your conversation—no digging required.
- **Contextualized Responses:**
  - Receive personalized answers that take your specific licensing information into account.
- **Built-in Best Practices:**
  - Receive guidance grounded in content backed by Gurobi experts.
- **Code Snippets on Demand:**
  - Need an example? Get ready-to-run snippets tailored to your situation. Run gurobipy code snippets to validate syntax.
- **Easy Escalation:**
  - Turn any chat into a formal support request when human assistance is needed.
- **Streamlined Feedback:**
  - Provide Gurobot with immediate feedback using simple thumbs-up and thumbs-down buttons.

# Architecture Overview

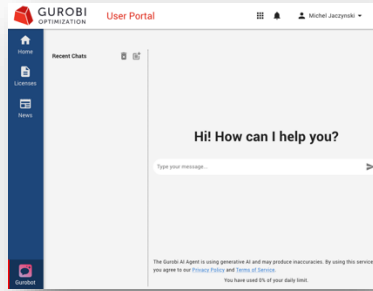


# Gurobi Intelligence Vision

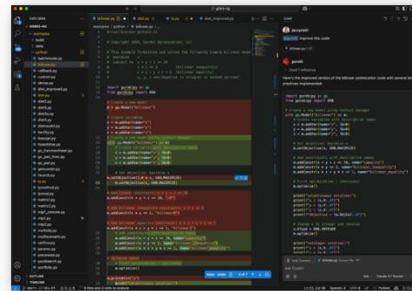


COMMITTING TO EXCELLENCE.

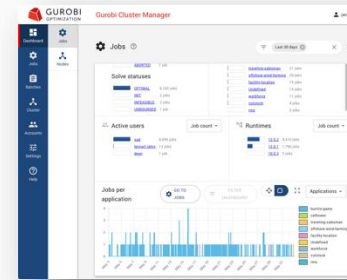
## Interfaces and Integration



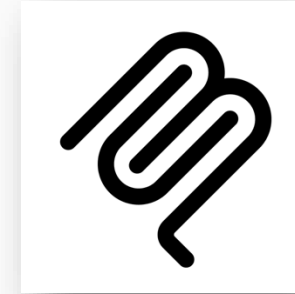
Chatbot



IDE: VSCode, JetBrains...

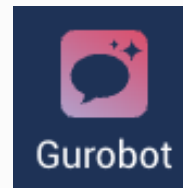


Assistants in context:  
Cluster Manager, CLI



Interoperability:  
MCP, A2A

## Orchestration and APIs



Agents for Gurobi related tasks:  
Support, Tuning, Insight, Modeling, Solving...

## Components



Knowledge Base to capture  
Gurobi best practices



Gurobi Tools:  
Optimizer, Tuner, Explainer  
Instant Cloud, Compute Server



LLMs:  
Claude, Cohere...



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# Thank you!

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