



# Siml.ai

1000+ USERS  
490% GROWTH SINCE  
ALPHA LAUNCH

## The platform for AI-based physics simulations

### OUR MISSION

To democratise scientific-grade simulation tools by making it easy for anyone to develop physics-based simulations and deploy them in their workflows, regardless of their technical skills. By making scientific simulation almost real-time, user-friendly, and accessible, we want to reach all engineers and physics enthusiasts globally.

Imagine you're designing a hydro power plant. It's critical your solution prevents future mistakes, reduces complexity and cost. Traditionally the process took years and cost millions, requiring expensive compute.

**Siml.ai does it 10-100x faster**

Made by

**DimensionLab**

Partners

 **NVIDIA**  
INCEPTION PROGRAM

 **INVESTMENT  
MANAGEMENT**

  
**LEMONADE  
STAND**

**challenger**  
ACCELERATOR

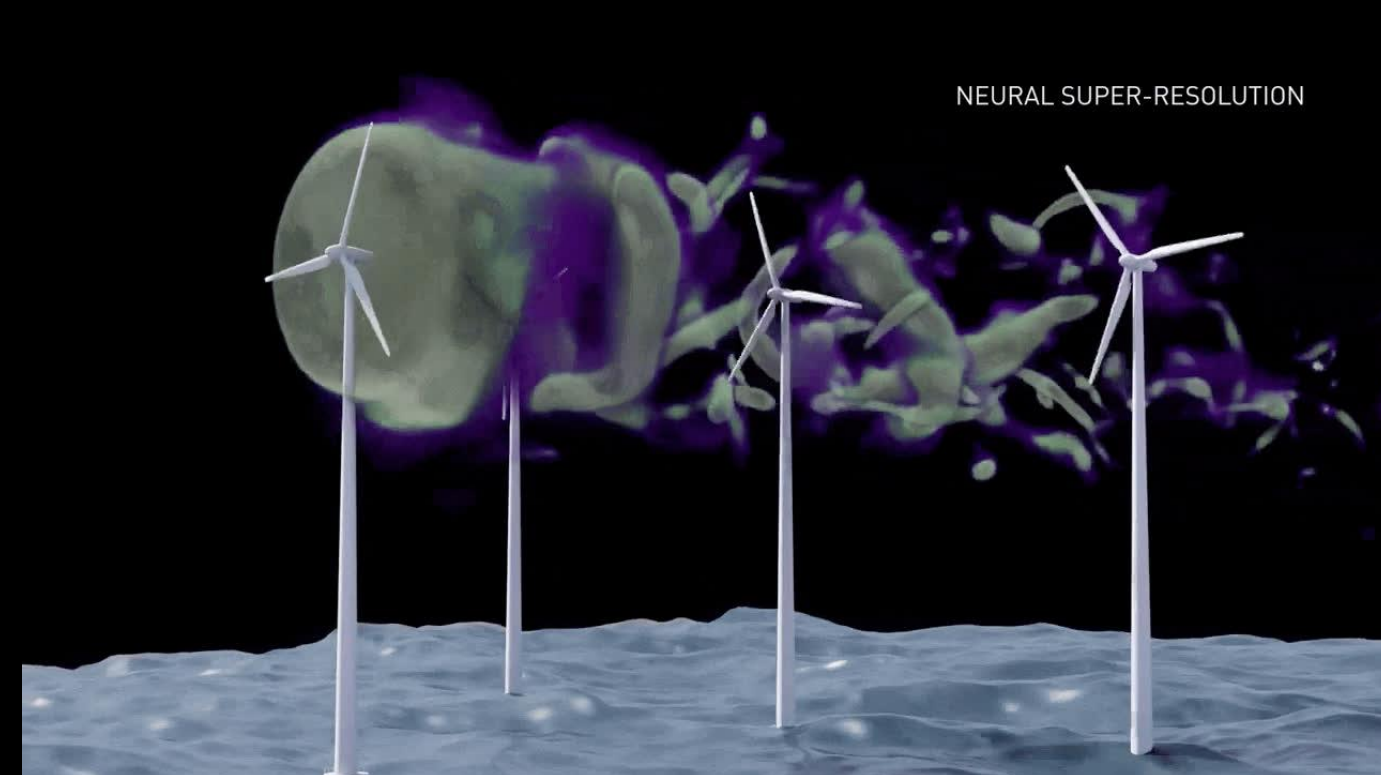
**ClimAccelerator**

Baltics & Slovakia

 **Climate-KIC**  
Co-funded by the  
European Union 



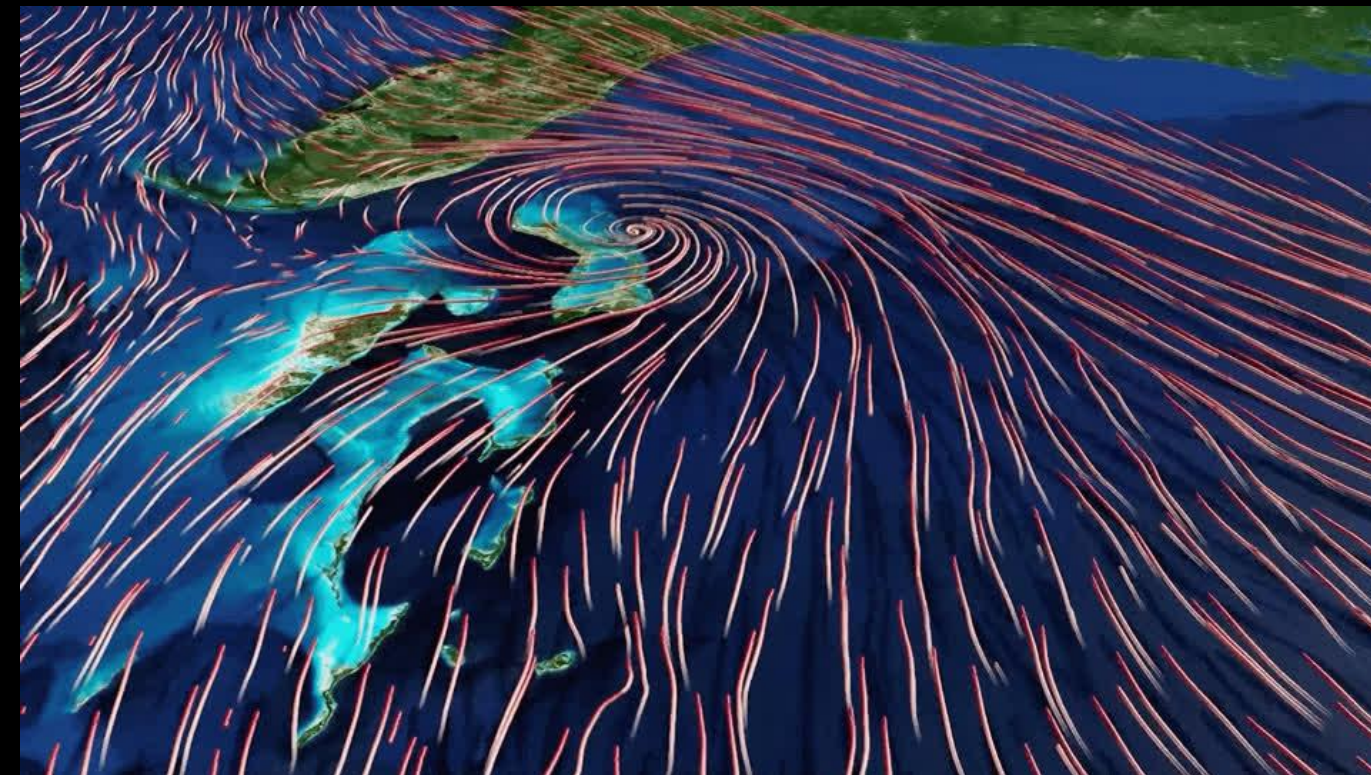
# WITH SIML.AI YOU CAN SAVE TIME & COSTS



The time of virtual physics experiments is cut to

## HOURS

instead of days or weeks



With AI, simulations are up to

## 50,000x

faster



Powerful hardware is in the cloud, available in

## 1 CLICK

on the web-based browser

## THE UNIQUE SELLING PROPOSITION

- AI Engineering platform **revolutionizing** the field of **physical simulations** **Saving time, Saving costs, Reducing CO2 footprint, Accuracy and Efficiency, Complexity, Scalability for its Customers**
- **Groundbreaking approach** to physical simulations by application of advanced and sophisticated technologies - **deep learning** and **artificial intelligence** with incorporation of **physics-informed neural networks** to address complex problems in physical simulations
- By **democratization of AI-enhanced simulations** individuals without advanced machine learning expertise can harness the power of PINNs
- **Transformative shift** in simulation development



# SIZE OF SIMULATION SOFTWARE MARKET

13.1%

33.5 B

18.1 B

## Market size value in 2023

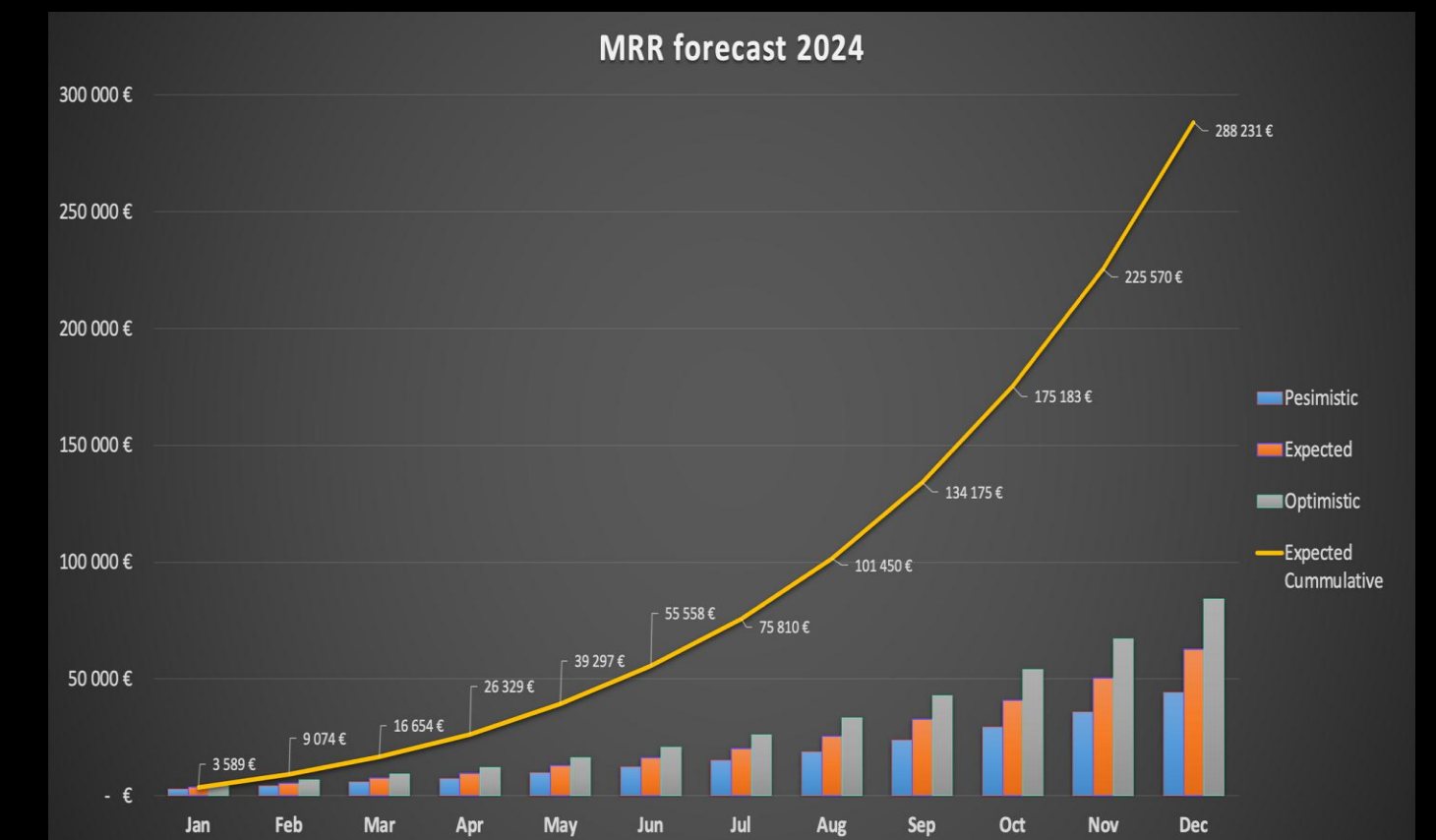
USD 18.1 billion

## Forecast for 2028

USD 33.5 billion

## Growth rate

CAGR of 13.1% from 2023 to 2028



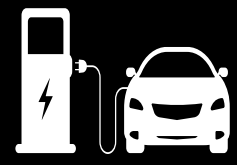


# IDEAL CUSTOMER PROFILE (FOCUS ON B2B)

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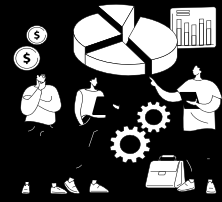
1. Tech companies relying on **Computational Fluid Dynamics**

(CFD) such as:



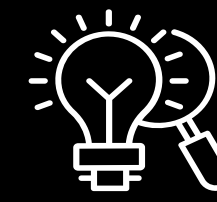
**TESLA**

2. Consultancy companies providing **simulation services** to their clients:



**RESOLVED**  
**ANALYTICS**

3. Universities invested in **research in physics-informed machine learning**



**BROWN**  
**UNIVERSITY**

# IDEAL CUSTOMER PROFILE (FOCUS ON INDIVIDUALS)

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**1. CFD Engineers.** Works at the engineering consultancy company or/and at the Technical University. They need a reliable, no-code, web-based, fast simulation platform. They create technical analysis about the simulated product or technology characteristics and in academic setting, they write research papers and use Siml.ai for research data.

**2. Engineering/Physics students.** They need reliable scientific simulation software for their research papers and other practical projects. Perhaps they have access to another software through their universities, but the interface is slow and complicated, with an outdated design. They want something modern, fast, and affordable.



# COMPETITORS

Traditional CPU/GPU-based simulation software

Modern GPU-based & AI-driven simulation software

## COMSOL Multiphysics

Multiphysics, CFD, Heat Transfer and Acoustics Module

**Core license: \$5,000+/yr**

**Price per Module:**

One-Year Term: **\$4,998**

Perpetual: **\$9,995**

## ANSYS

Multiphysics Solver  
**\$43,000/year**

ANSYS Fluent (CFD)  
**\$29,000/year**

HFSS version 9  
**Starts at \$40,000/year**

## Monolith AI

**Data-driven** modeling with no-code AI tool, **cannot use without data**

Focusing on product/technology testing and product design optimization

Automotive, industrial and aerospace

## Navasto NAVPACK

Data-driven AI modeling through Blender/Paraview plugin, **cannot use without data**

Focus only on product design optimization

Automotive and marine

## Neural Concept

Data-driven AI modeling platform, **cannot use without data**

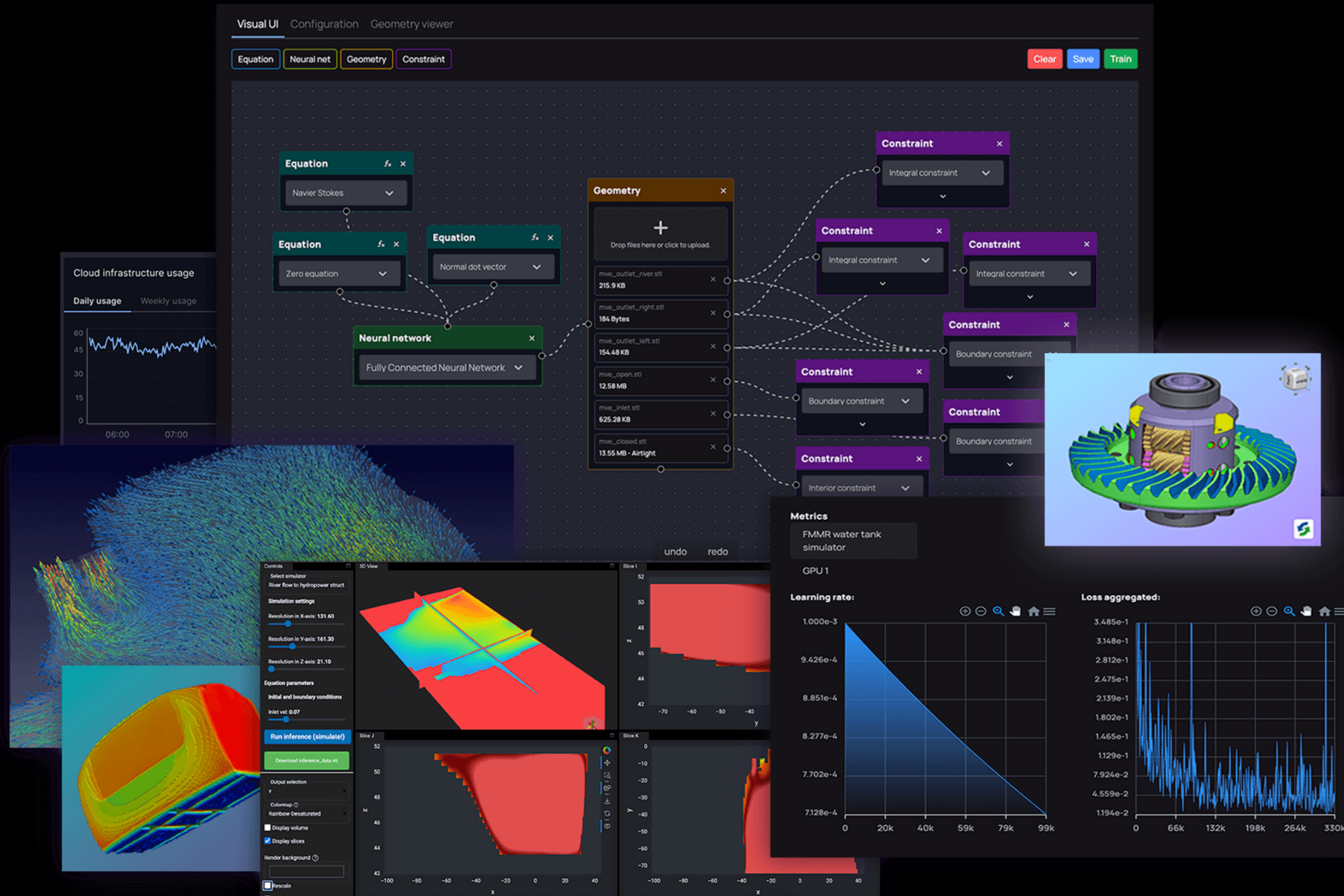
Heat transfer, design optimization, HVAC, structural mechanics, electromagnetics

Needs training data from simulations created in other simulation SW





# Our PRODUCT - MODEL ENGINEER

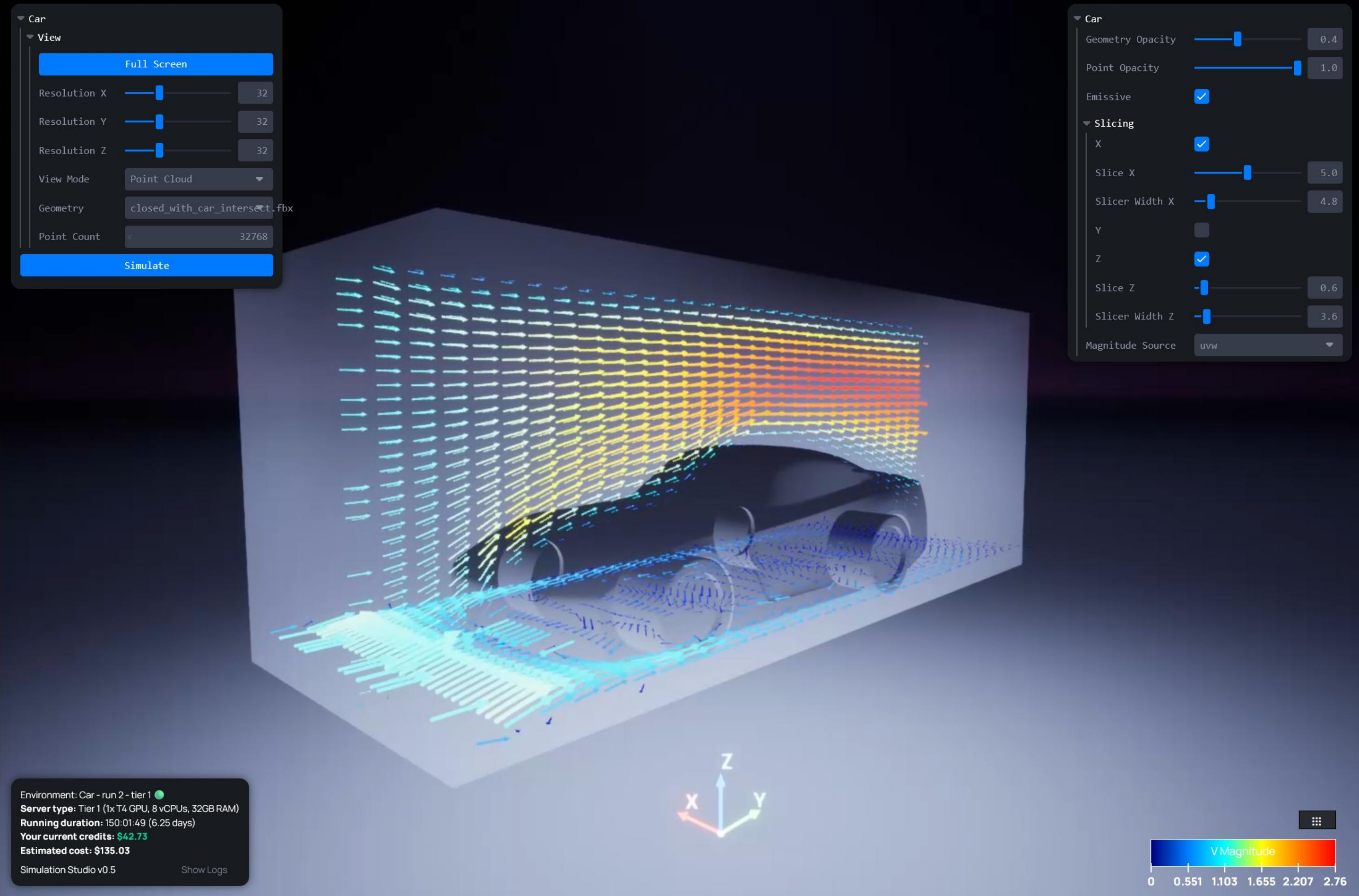


- **Pre-built models** and examples
- **Bundled equations** for multiphysics, CFD, heat transfer, acoustics, seismics, electromagnetics; or **you can implement custom physics solvers yourself**
- **Easy-to-use** visual interface
- **No-code / Low-code**
- **One-click** access to robust cloud infrastructure for training AI models
- Build **interactive web apps** on top of our **Simulator Inference & Training Environment (SITE)**
- **Monitoring** dashboards
- **Dataset preparation**





# Our PRODUCT - SIMULATION STUDIO



- **Interactive visualization tool** for numerical simulation and virtual physics experiments
- **Explore hundreds of variations** by running **simulations in seconds**
- **Automated optimization** of complex geometries
- Fastest way to build digital twins that need **real-time physics** simulation
- Support for **virtual and augmented reality**



# PILOT CLIENTS



DimensionLab is working with **Kovohuty Krompachy** to integrate Siml.ai into their workflow to achieve **10% cost reductions of metallurgical processes (~€100k/week)** and **process time reduction under 24 hour/cycle.**



Siml.ai helps **RFB's** engineers **increase hydroplant's energy generation efficiency, optimize water structure endurance against strong floods.**



Siml.ai is being integrated into **TUKE's** software library used by their researchers for **commercial and research simulations across metallurgy, aerospace, automotive, manufacturing, material science structural mechanics, and civil engineering.**



DimensionLab team developed a PoC **AI model for near-real-time predictive maintenance** of automatic gearbox, which is **5,000x faster than AUFEER Design's proprietary MATLAB-based model.**



**ECOCAPSULE**

Siml.ai was used to create AI simulator that can **analyze 10's of insulator materials** in for **multiple temperatures within seconds, reducing the time-to-market** of **Ecocapsule's** new model v2.



**Takeda Pharmaceuticals** reached out to DimensionLab to develop **high-fidelity digital twin with integrated AI simulators** for modularizing and speeding up their R&D process.

# PRODUCT VALUE AND GROWTH



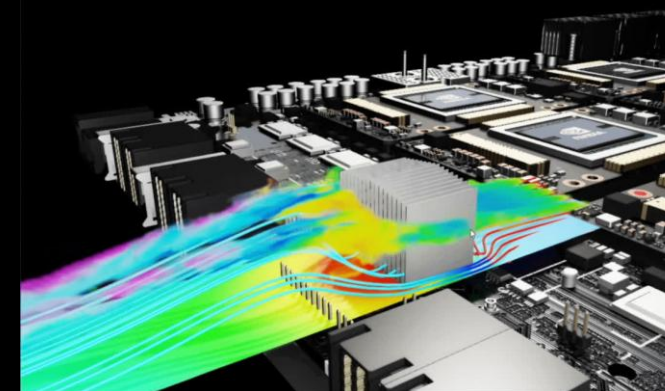
**Data-driven AI model for predictive maintenance in the automotive industry:**

- 99.77% prediction time reduction
- 430x faster (from ~6h to 50 secs) 99.88% reduction in compute costs 98.52% energy saved, (significant reduction of CO2 trace), unlocking near-real-time iteration times for hardware analysis
- Working on a joint collaboration with Škoda

**ECOCAPSULE**

**Pioneering sustainable living spaces, adaptable to diverse environmental conditions:**

- Optimized Heat Transfer in Ecocapsule v2
- Pre-trained simulator for fast experimentations with multiple material properties and outside temperatures between -25°C and +50°C
- 70% enhanced thermal efficiency
- 60% reduced energy consumption



**1 000+ users of Siml.ai**  
**490% growth** since the alpha launch  
**127% growth**  
in newsletter subscribers since September



# MEET THE CORE TEAM



Co-founder & CEO

## Michal Takac

13+ years SW engineering experience across various SaaS / crypto / metaverse / AI startups, co-founded 4 startups. PhD in Cybernetics. Slovak Student Personality of the Year 2021 in the category of metallurgy, engineering and energy.

 [/in/michaltakac/](#)



Co-founder & CFO

## Peter Macinsky

Strategic manager. Peter is a serial entrepreneur in fintech with a strong IT background. Helped to start Solar Turbines (USA) collaboration with R&D team at Ness Košice.

 [/in/macinsky](#)



Co-founder & BizDev

## Branislav Krsak

Academic consultant in 100+ international projects, PI in 27 projects, R&D commercialization facilitator. Successful and seasoned entrepreneur with rich 20y+ experiences.

 [/in/branislav-krsak](#)



Co-founder & VP Eng.

## Martin Muzelak

Previously SW engineer at IBM. Finalist at IBM Hack 2019. 2nd place at Falling Walls Lab 2022, PhD. candidate in Cybernetics.

 [/in/martin-muzelak](#)



Head of R&D

## Fouzia Adjalialia

Pioneer researcher in the field of AI & robotics, ambassador for women in STEM with a particular focus on AI. Keynote speaker at major conferences.

 [fouziaadjailia.com](#)

 [LinkedIn profile](#)



Senior SW Engineer

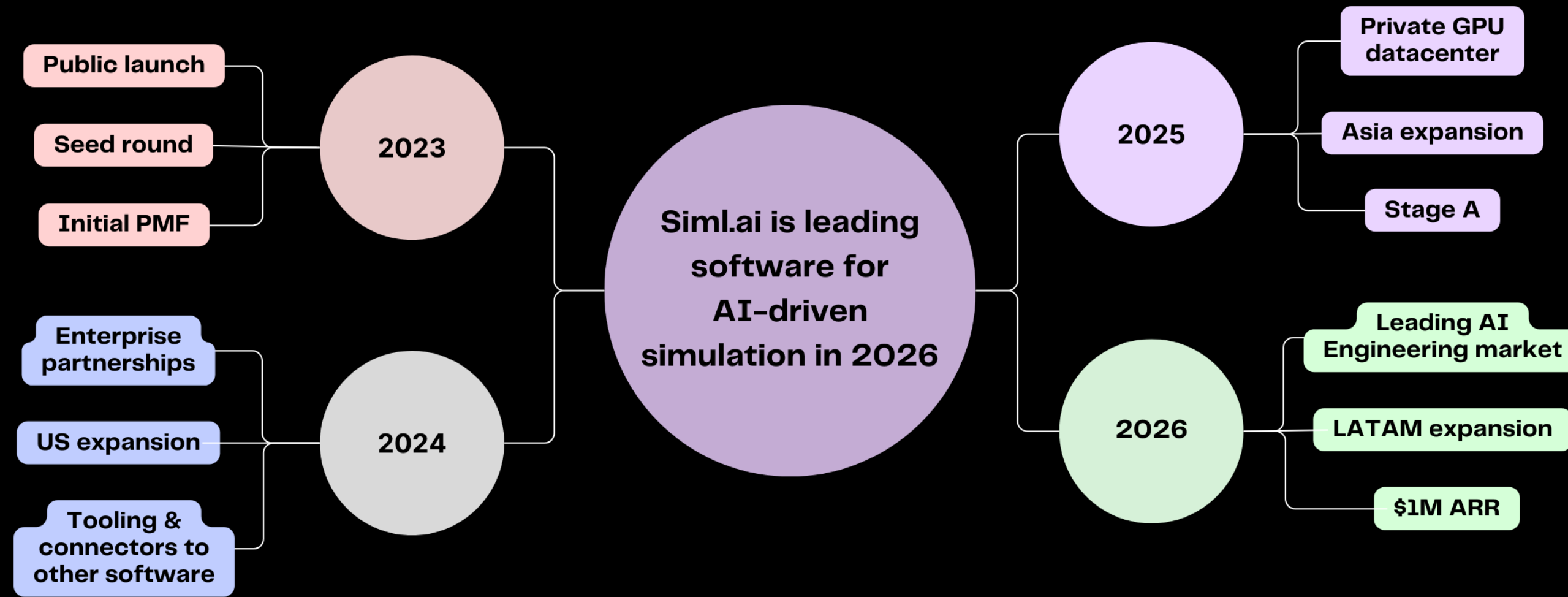
## Maros Pekarik

8+ years of experience in SW engineering and interaction design, specialist in virtual spaces and interactive design. Creative technologist active in robotics and immersive media art.

 [/in/marospekarik](#)



# 4 - YEAR ROADMAP



## Thanks For Watching!

Together, let's revolutionize the way industries approach physics simulations.

*Siml.ai Team*

### TRL 5 - 8 Development Plan

- Scale the technology to handle real-world, industry-scale problems
- Integrate Siml.ai into diverse environments relevant to its target industries
- Conduct extensive validation tests in environments that closely resemble real-world scenarios
- Validate the accuracy, efficiency, and reliability of Siml.ai across a diverse range of use cases
- Continuous Development of a comprehensive commercialization strategy, including pricing models, marketing plans, and sales strategies
- Deployment in pilot programs with select partners or early adopters to gather real-world feedback
- Ensure Siml.ai can seamlessly scale to meet the demands of a growing user base
- Collect feedback from users and stakeholders to identify areas for improvement
- Iteratively refine Siml.ai based on user input to enhance usability and address specific industry needs
- Optimize the performance of Siml.ai, ensuring it meets or exceeds industry standards for speed, accuracy, and efficiency
- Address any bottlenecks or limitations identified during testing
- Strengthen security measures to protect user data and sensitive information
- Implement robust data privacy practices, aligning with industry standards and regulations
- Ensure to comply with relevant industry regulations and standards
- Preparation for all necessary certifications or approvals required in target markets
- Strengthen strategic partnerships with industry leaders, research institutions, or potential clients
- Create thorough documentation for users, administrators, and developers
- Develop training programs to ensure users can effectively leverage Siml.ai's capabilities
- Continuous innovation to keep Siml.ai at the forefront of technology



Product Overview Video

<https://www.youtube.com/watch?v=uqAiY1Z0g4g>

