



2021.AI

THE ENTERPRISE AI COMPANY

GRACE

AI PLATFORM

WWW.2021.AI

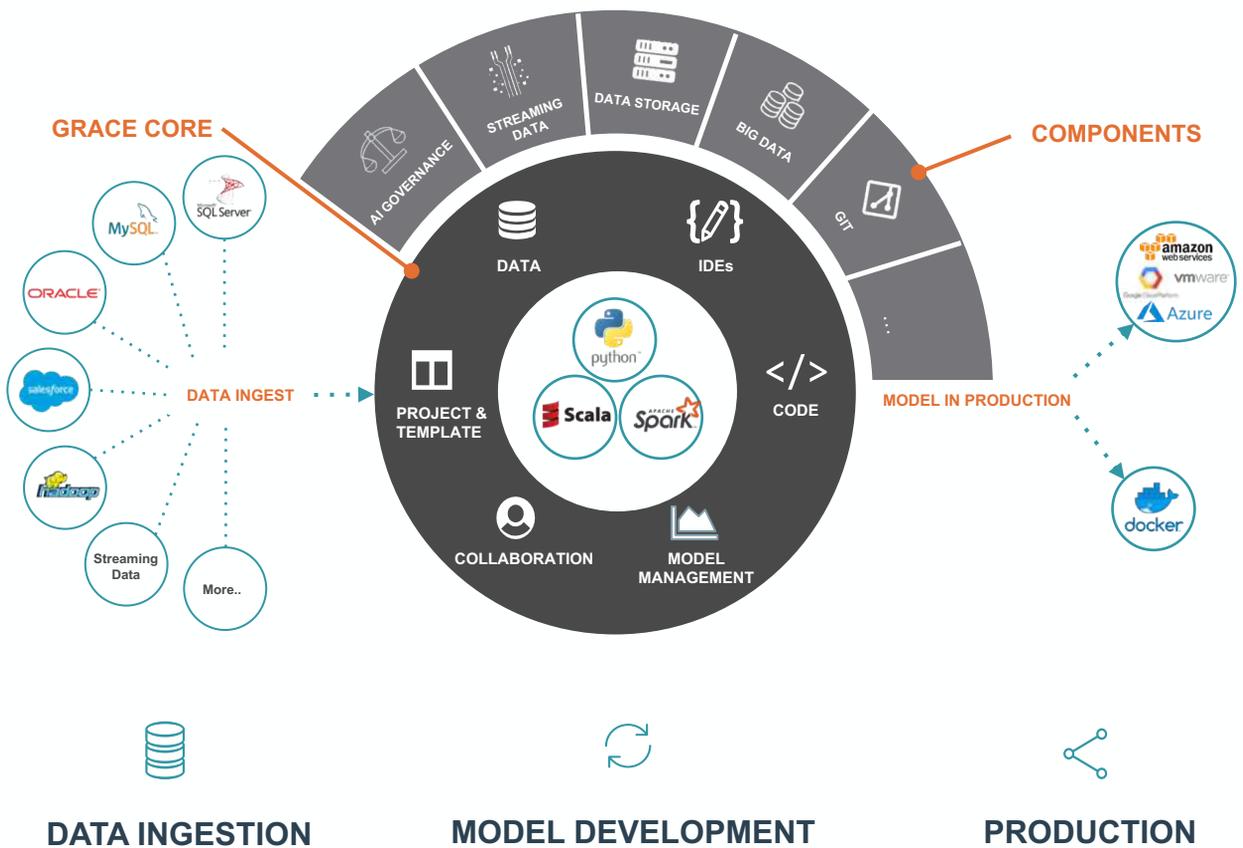
**“AN AI PLATFORM BASICALLY
LOWERS THE BARRIER OF
ENTRY AND ENABLES FEWER
ENGINEERS TO REINVENT LESS,
ALLOWING THEM TO FOCUS ON
IMPLEMENTING THE AI THAT IS
SPECIFIC TO THE BUSINESS”**



**BOARD MEMBER
DANNY LANGE**

GRACE

CORE AND COMPONENTS



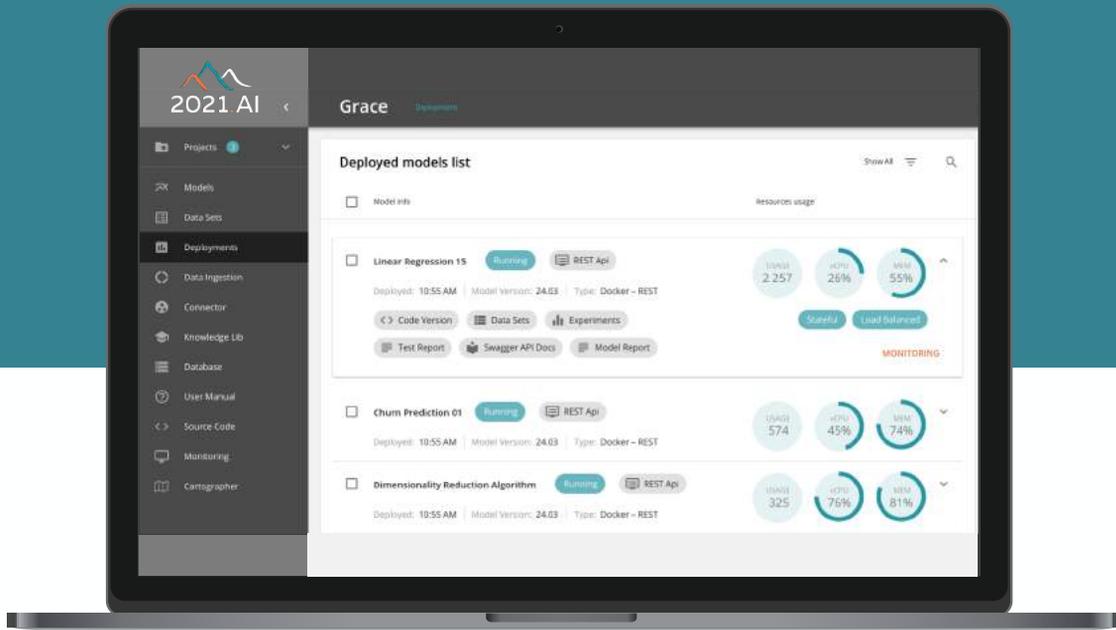
The Grace AI Platform offers clients **with in-house data science teams** an enterprise AI solution to support and enhance the team's productivity and efficiency.

Grace standardizes processes and workflows across the data science functions in such areas as data ingestion, model training, deployment, and model lifecycle functionality, including model monitoring and retraining.

The Grace AI Platform offers clients **without in-house data science teams** a fully functional AI solution, where the full AI life-cycle can be outsourced. Grace leaves the full AI life-cycle to AI expert partners, including AI model development, deployment, monitoring, re-training of models and other life-cycle maintenance enabling such clients to also embark on the AI journey.

MEET GRACE

SERVICING THE NEEDS FOR THE MOST ADVANCED DATA SCIENTISTS



PRODUCTIONIZE AI AT SCALE

Only in production, AI adds clear and measurable value. Only by implementing AI across an enterprise, and at scale will an organization be competitive for the next decade.

Grace standardizes processes and workflows across such areas as data ingestion, model training, deployment, model lifecycle functionality, model monitoring, and retraining.

Grace provides organizations with the most comprehensive AI Governance, including monitoring and surveillance as well as traceability, explainability and other compliance options.

GRACE AI PLATFORM



EFFICIENT AND PRODUCTIVE

Organizations seeking to efficiently implement AI should standardize processes and improve workflows in their data science functions. Grace offers professional Data Scientists an enterprise solution to support and enhance efficiency in such areas as data ingestion, model training, deployment, and model lifecycle functionality such as monitoring and retraining.



FLEXIBLE

Offering features like the ability to freely install new libraries, the choice to work with preferred data science tools, and allowing integrations to in-house IT systems and data lakes, all this ensures necessary flexibility.



VENDOR INDEPENDENT

Grace offers vendor neutrality in terms of cloud deployments supporting Microsoft Azure, Google Cloud Platform, Amazon Web Services, and private/public cloud deployments, as well as on-premise installations followed by subsequent support and maintenance of these installations.



SECURE

Grace is strongly focused on compliance and GDPR, as well as supporting all the necessary InfoSec and IT security features required in the majority of organizations. In addition, with the ability to deploy, maintain and support individual private cloud deployments, each organization can apply its own security and privacy features.



GOVERNANCE

Grace supports traceability and explainability of events and activities on the platform. Monitor the way that everyone works on the platform so that compliance and standard processes can be traced, explained, and enforced. Track and explain all areas within the data science model development cycle such as data used for model training and development, model bias and more.

FUNCTIONALITY

DEVOPS

- Deploy on Azure, Google Cloud, and AWS using Terraform and Vault, or on-premise
- User management using CLI and GUI
- Kubernetes for container management
- Horizontally scalable for AI development and models
- Compute resource management for individual AI projects
- Extensive model monitoring through API, model, and model test reports
- GPU support for training and model production
- Monthly releases incl.:
 - End-to-end DevOps testing cycles
 - Continuous integration updates with scripted tests
 - Continuous deployment cycles to various infrastructures with an opt-in/opt-out

DATA SCIENTISTS

DATA INGEST

- Data ingestion for data in motion or at rest, using standard databases (MySQL, MSSQL, Oracle, Cassandra, MongoDB, etc.) or SaaS data sources (salesforce.com, etc.)
- Data at rest in the platform using an in-house platform NoSQL database, graph database
- Ingest streaming data sources using Apache Nifi
- Build data catalogs through Nifi and HDFS/KNOX

DATA SCIENCE CODE

- Work with Python, R, and Scala
- Remote workspaces, using Eclipse, PyCharm, Sublime Text, and many others, incl. SSH access
- Working with Jupyterlab Notebooks
- CRUD Kernels and work with different kernels in the platform and in individual projects
- Full support for versioning and collaboration on versioned code and data

DATA SCIENCE MODELS

- Deploy models in a docker container and run them inside Grace, as well as outside
- Audit logs and data access
- Project-based sharing of data science code and data
- A curated list of libraries guaranteed to work with code, using automated testing
- Work with all the popular libs: Tensorflow, Keras, Scikit-learn, XGBoost, etc.
- End-to-end data science testing done at monthly release cycles
- Manage model experiments, as well as monitoring and comparing experiments
- Use and run Jupyterhub instances with custom amounts of vCPUs and memory
- In-platform Knowledge Repo for sharing data science code
- Setting up processes for model deployment
- Framework for enabling reproducible experiments and versioning datasets, code, and models
- Apache Spark and HDFS available in the platform for large datasets and distributed training runs

GRACE STANDARD MODELS

FAST TRACK TO YOUR FIRST AI MODEL IMPLEMENTATION

Grace Standard Models are the fast track to your first AI model implementation without sacrificing future flexibility or extensibility for strategic scaling of multiple AI models across your organization.

As Grace Standard Models are delivered on Grace, clients with growing AI ambitions and interest in extending to more bespoke and advanced AI model development will be well supported while adding more models and modules on Grace as the requirements grow.



PRE-BUILT PIPELINES

The Standard Models have pre-built data pipelines based on specific data structures, the only thing we need from you is your data.



PRE-PACKAGED DATA SCIENCE EXPERTISE

Standard Models comes with the expertise from our multiple model implementation, pre-packaged to you for easy AI implementation.



EASY IMPLEMENTATION

Standard Models are easily implemented in your IT infrastructure via Grace, and if requested smoothly integrated with your BI tools such as Qlik, PowerBI or Tableau.



GRACE AI PLATFORM

BUILD OR BUY

GRACE VS. DO-IT-YOURSELF

PLATFORM DESIGN

Platform design is complex and demands both strong data science knowledge and deep enterprise technology expertise.

This includes areas like:

- The data science workflow and development processes, not to mention how multiple Data Scientists can collaborate on projects during the full model lifecycle management.
- Security, as your data science platform, must live up to security standards that effectively mitigate security concerns and risks.
- Ensuring compliance in a rapidly evolving regulatory environment, ensuring GDPR and other new legal requirements.

TECHNOLOGY CHURN

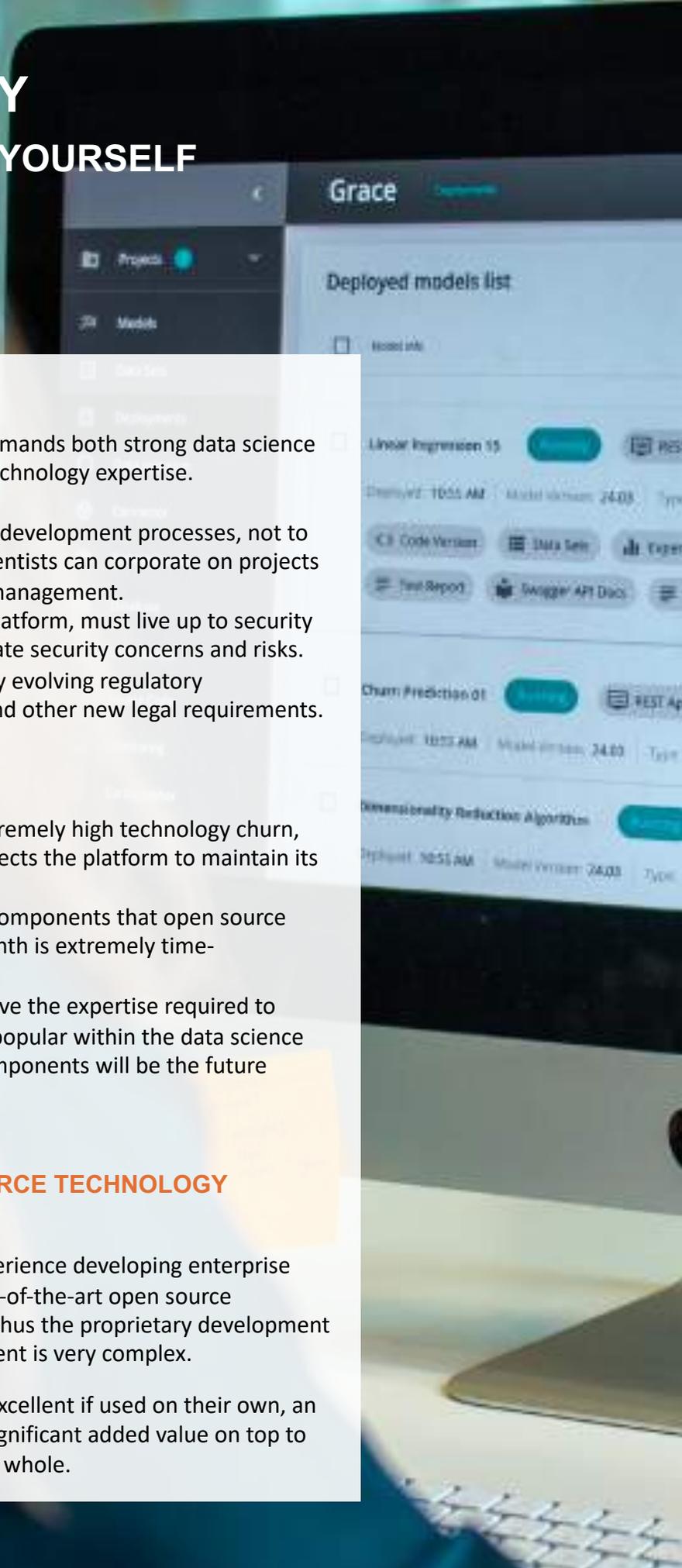
The AI field is characterized by extremely high technology churn, and a high caliber practitioner expects the platform to maintain its position at the leading edge.

- Monitoring thousands of new components that open source community produces every month is extremely time-consuming.
- Only a few organizations will have the expertise required to decide which components are popular within the data science community now, and which components will be the future standards.

COMPLEXITY OF OPEN SOURCE TECHNOLOGY INTEGRATION

Few people in the world have experience developing enterprise solutions based on the latest state-of-the-art open source components. These are very raw, thus the proprietary development needed to interface each component is very complex.

While open-source tools may be excellent if used on their own, an enterprise platform still needs a significant added value on top to represent the integral value of the whole.



SUPPORTABILITY

Building a support team with profound knowledge within data science is costly. The integration of monitoring components and building processes around support requires highly skilled talent and time. The telemetric and backstopping functional area is perhaps one of the key aspects of Grace which demonstrates that it is designed to encourage and facilitate growth in the data science function.

In a nutshell, the Grace platform's purpose is to constitute a good technological foundation to conduct data science. The platform supports bridging your data science function and 2021.AI's Data Scientists and infrastructure experts at the client's discretion only.

This access to experienced technical resources takes place on two primary levels:

- The data science level
- The infrastructure, technical operations, and governance level.
- Similarly, client-side Data Scientists will be able to reach out to members of the 2021.AI's data science team to access sparring, guidance, and consultation. Should a client wish to outsource an entire model development task to the 2021.AI upstream resources, this option is also available.

TESTABILITY

It is extremely important that all functional and non-functional aspects of an enterprise platform are properly and continuously tested.

- Building enough test cases to test all functional areas of the platform
- Making sure that custom-developed data science code and data science experiments can run on the platform after upgrading
- Making sure that data science libraries work together with different versions and in different configurations
- Making sure that platform scalability and security is actually tested

These are time and expertise in consuming activities that few organizations have the capacity and willingness to do in-house.



THE ENTERPRISE AI COMPANY

2021.AI SERVES THE GROWING NEED FOR APPLIED AI ACROSS THE GLOBE. OUR DATA SCIENCES EXPERTISE IN COMBINATION WITH OUR GRACE AI PLATFORM OFFERS A TRUE AI DIFFERENTIATOR FOR CLIENTS AROUND THE WORLD. ON GRACE, DATA SCIENTISTS CAN SOLVE SOME OF THE MOST COMPLEX PROBLEMS, OR DIRECTLY IMPLEMENT OUR PACKAGED SOLUTIONS RELATED TO CHURN PREDICTION, CHAT-BOTS, CLASSIFICATION, AND MUCH MORE. CURRENTLY WITH MORE THAN 80 EMPLOYEES AND FAST GROWING, 2021.AI IS HEADQUARTERED IN COPENHAGEN WITH SALES AND R&D IN SEVERAL LOCATIONS, GLOBALLY.