KEYSIGHT

Infrastructure Reinvented | MLOps, Data Ingestion & Software Integration for Scalable Physical AI

AI Development Platform

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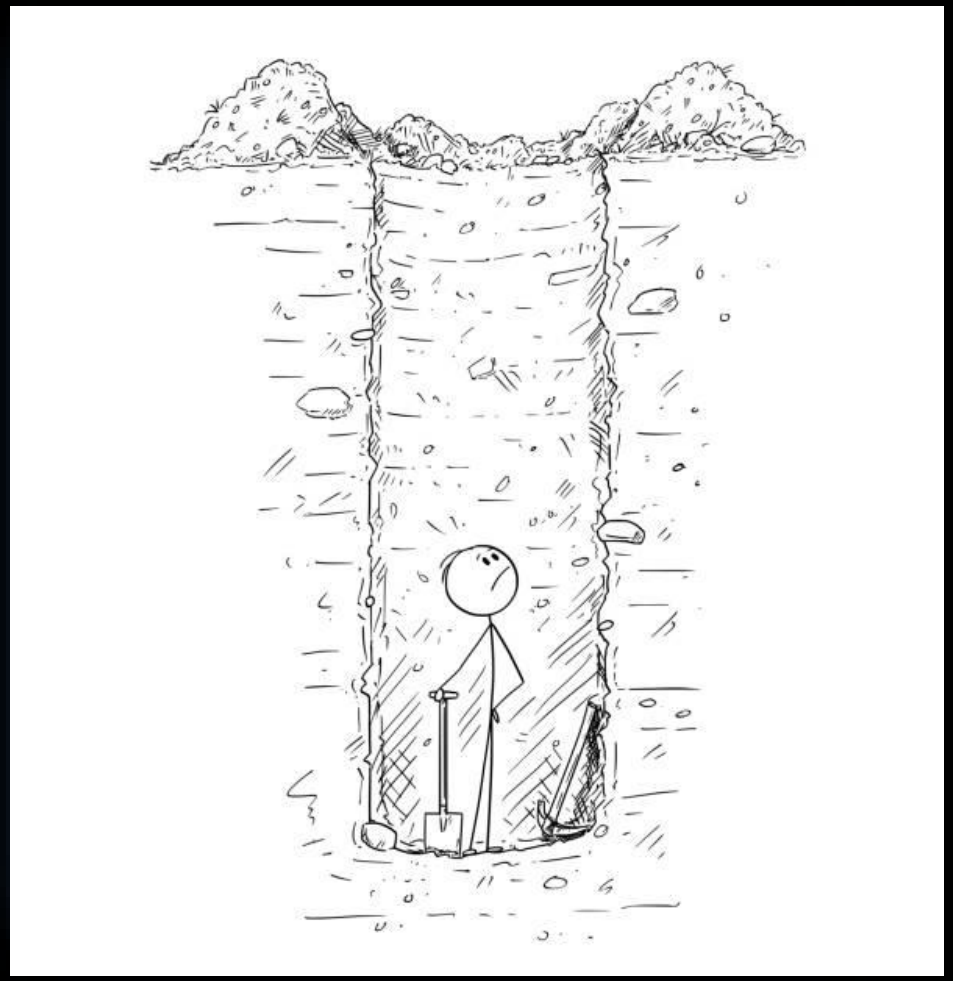
Who finds the treasure first?



AI just changed the terrain of engineering

Are you on the right path?

What is Physical AI?

Machine learning models **operate on hardware in real time** — enabling them to engage with the physical environment.

These models utilize **sensors to perceive their surroundings** — employing actuators to manipulate the environment.

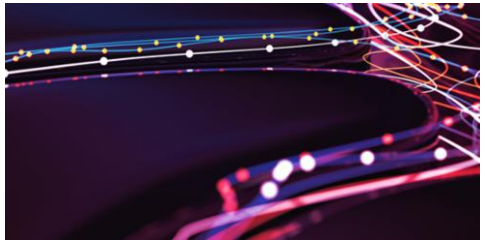
Physics-based machine learning techniques can be used to **comprehend and interact with the real world.**

Examples of Physical AI

Applications for physical AI are all around us — if you know where to look.

Self-Driving Cars

AI and ML models power the ADAS technology behind autonomous vehicles.



AI in RAN

AI and ML helps wireless customers gain further efficiency in their networks and devices

Autonomous Drone Swarms

AI keeps autonomous drones in flight, in formation, and on target.

What Are The Biggest Challenges with Delivering AI?

Real-World Training Data

On-Device Validation

Scaling Beyond Research

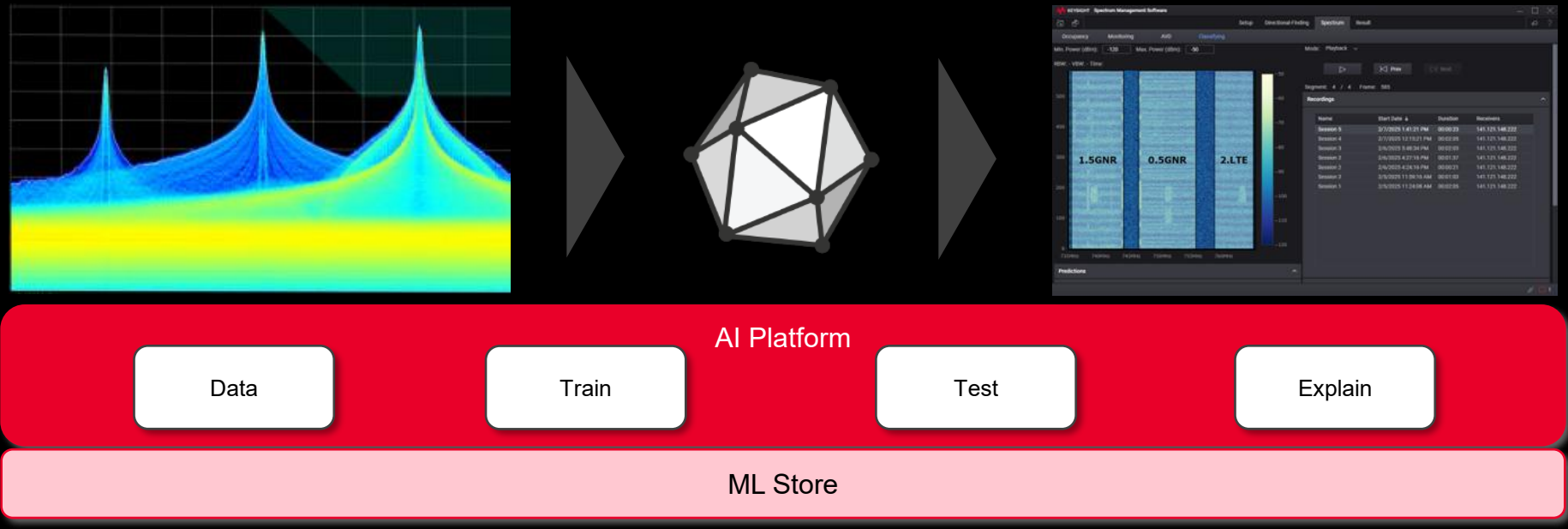
The Technology We're Employing

AI-Native Design and Validation with Keysight

Data Generation & Test: Ground truth data through Keysight HW and Digital Twins

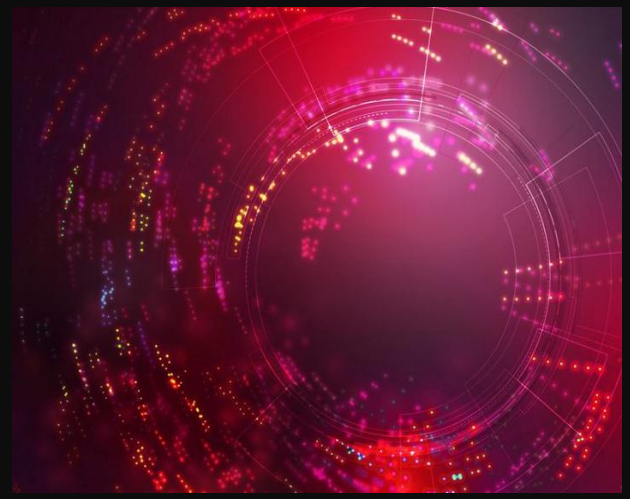
Retraining Pipelines: Continual learning with new data aligned with evolving needs

Explainability: Transparent insights into AI decision-making, critical accuracy, assurance and trust

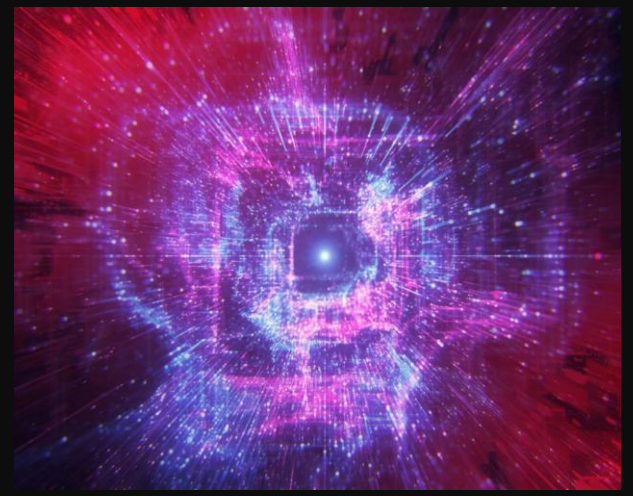


Why Keysight?

Complete portfolio of realistic domain data.



Comprehensive, system-level validation — beyond models.



Enterprise-focused approach for engineers.

Central Store

End-to-end traceability

Project Management

- Connect and manage model development and requirements
- User-level access controls

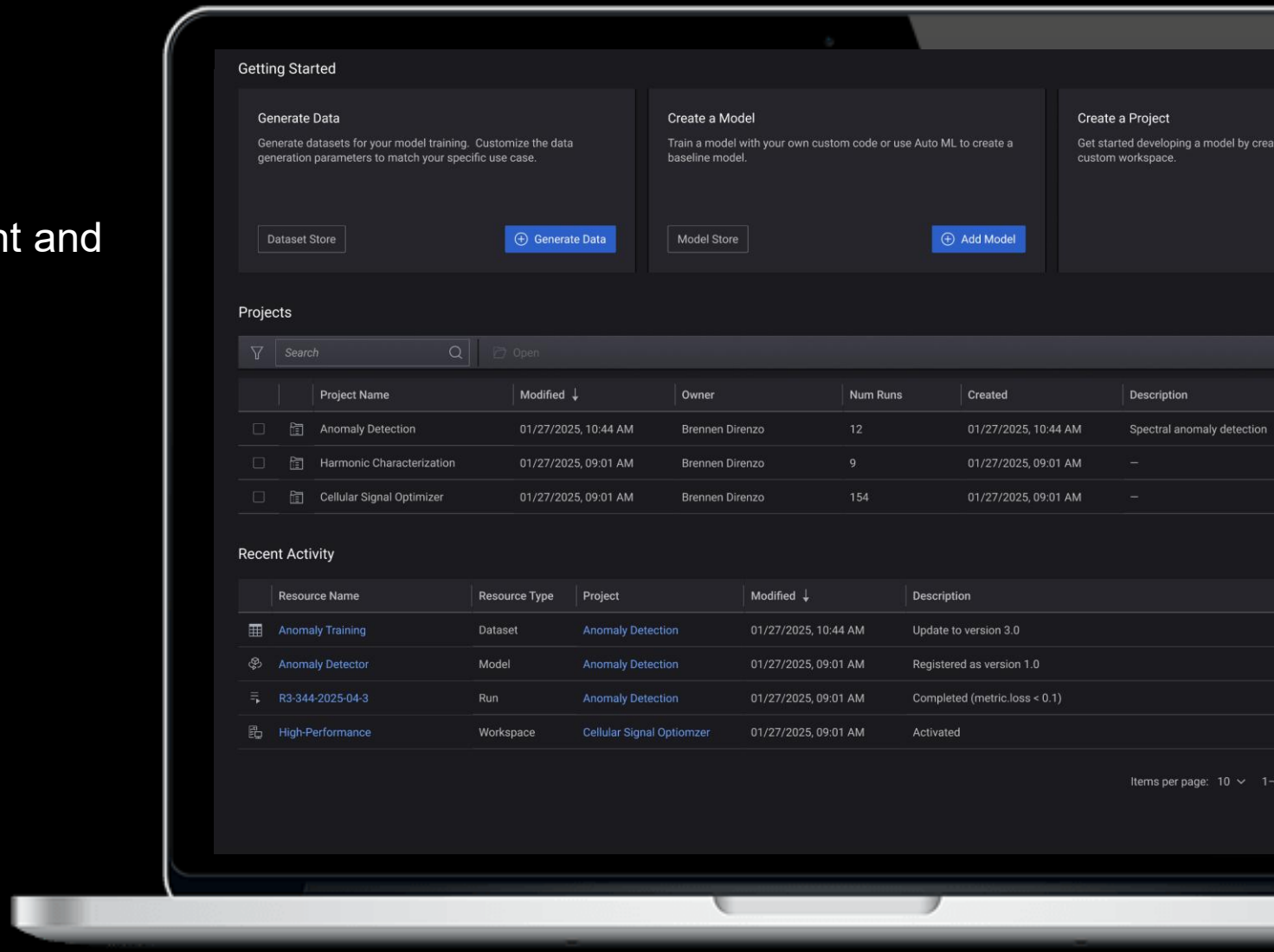
Traceability and Lineage

Track versions and changes

- Audit and rollback as needed

Central Management

- Store and version all required artifacts
- Seach filter and share to increase reuse



Data Generation

Manage, curate, transform

Comprehensive Data Generation Tools

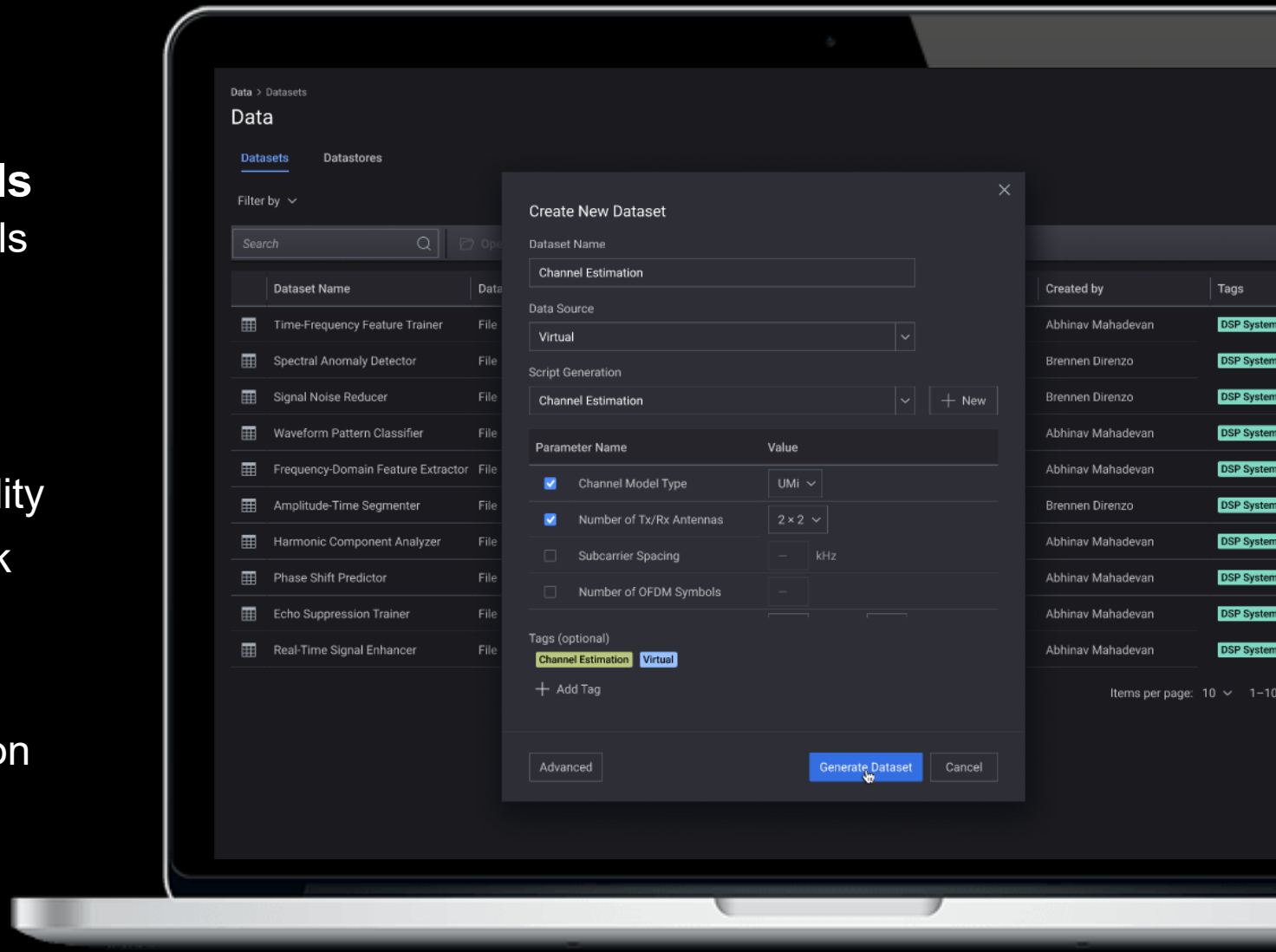
- Leverage Keysight's industry-leading tools
- Automate generation and labeling of production quality datasets

Data Management and Versioning

- Own your data, but maintain full traceability
- Store datasets locally within your network

Data Quality and Augmentation

- Enhance quality and relevance with data cleaning, normalization, and augmentation
- Fill gaps and balance datasets with a combination of real and synthetic data



Training

Model design and development

Automated Training Workflows

- Streamline model development with automated training pipelines, experiment tracking, and trigger retraining

Model Optimization

- Optimize model performance
- Improve efficiency with pruning, sparsity, and combined operations

Foundational Models and Fine-Tuning

- Fine-tune models with pre-trained foundational models and tools
- Adapt models for fast improvements

System Test

Full-coverage system and model training

Comprehensive Testing Environment

- Create flexible testing environments that simulate real-world scenarios
- Ensure models perform in various scenarios

Advanced Performance Testing

- Analyze real-world performance
- Measure latency, power consumption, utilization, and efficiency

Hardware Integration

- Validate full system performance with hardware test equipment

Explainability

Model performance and interoperability

Interpretability Tools

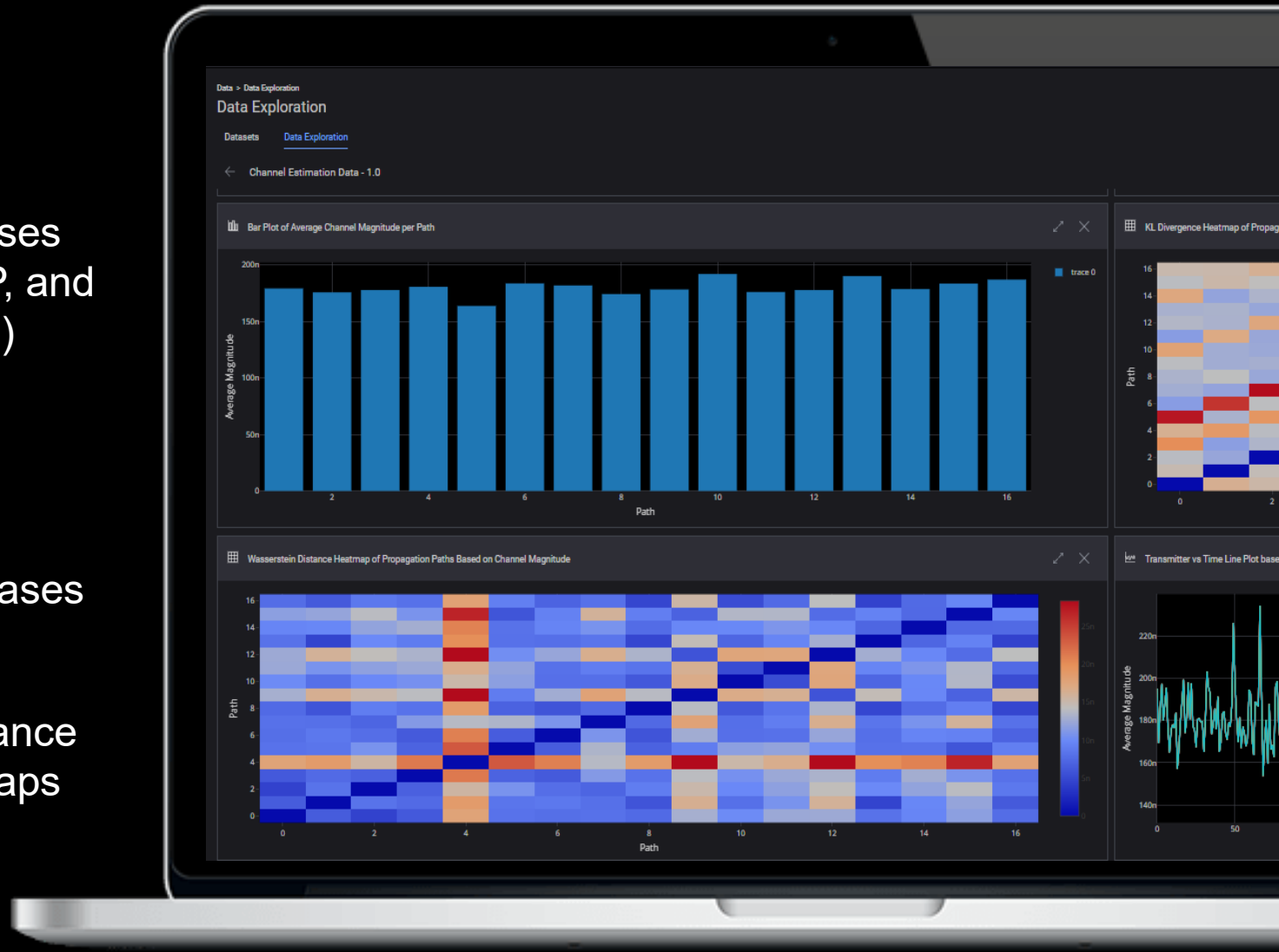
- Gain insight into decision-making processes and feature importance with LIME, SHAP, and Layer-wise Relevance Propagation (LRP)

Counterfactual Explanations

- See how changes in input data can alter model predictions
- Analyze decision boundaries and edge cases

Visual Explanations

- Pinpoint model focus areas and performance issues with visualizations like saliency maps



Accelerate Your AI Journey with Keysight

In Conclusion

- **Unified AI Lifecycle:**
  Keysight's platform brings together every stage of the AI journey—from data generation and curation to model training, system validation, deployment, and explainability—into a single, integrated workflow.
- **Real-World Impact:**
  By leveraging industry-leading hardware, digital twins, and automated pipelines, you can build robust, reliable AI solutions that are ready for real-world deployment and mission-critical applications.
- **Continuous Innovation:**
  Automated feedback loops, retraining, and system-level validation ensure your models stay adaptive and high-performing as conditions evolve.
- **Trust and Traceability:**
  With built-in explainability tools and centralized management, you gain full traceability, regulatory compliance, and stakeholder confidence in every model you deploy.

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