Accelerating the

Open AI SW Ecosystem

for AI Everywhere

Imagine a world with AI everywhere...

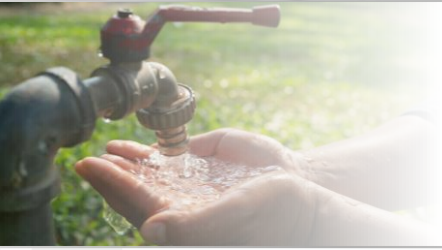
AI Applications Today

Faster Nerve Detection
Through Ultrasound

Healthcare

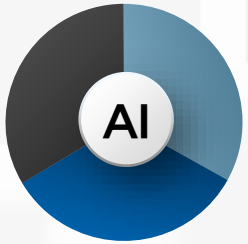
Improving Customer Experience
Through Recommender Systems

Finance



Identifying Clean Water Sources
With Cameras & AI Inferencing

Environment

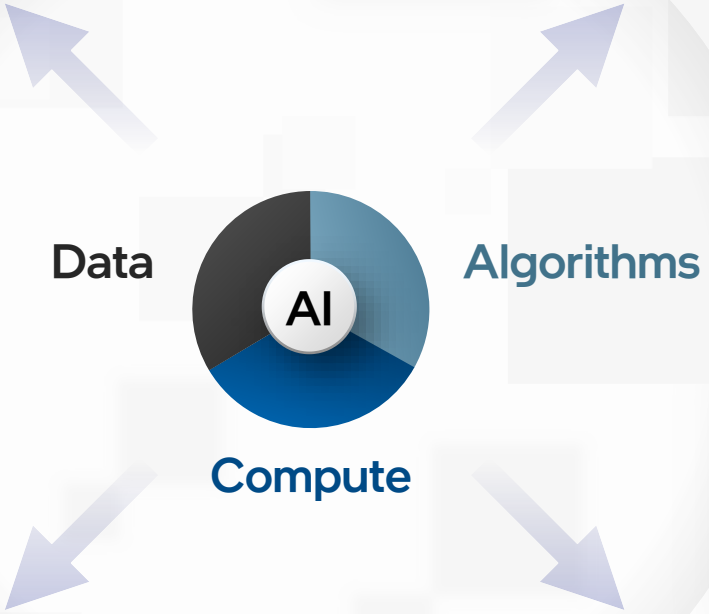


Find more of our many AI success stories at intel.com/SoftwareFirst

... And Several Others

Bringing

AI Everywhere

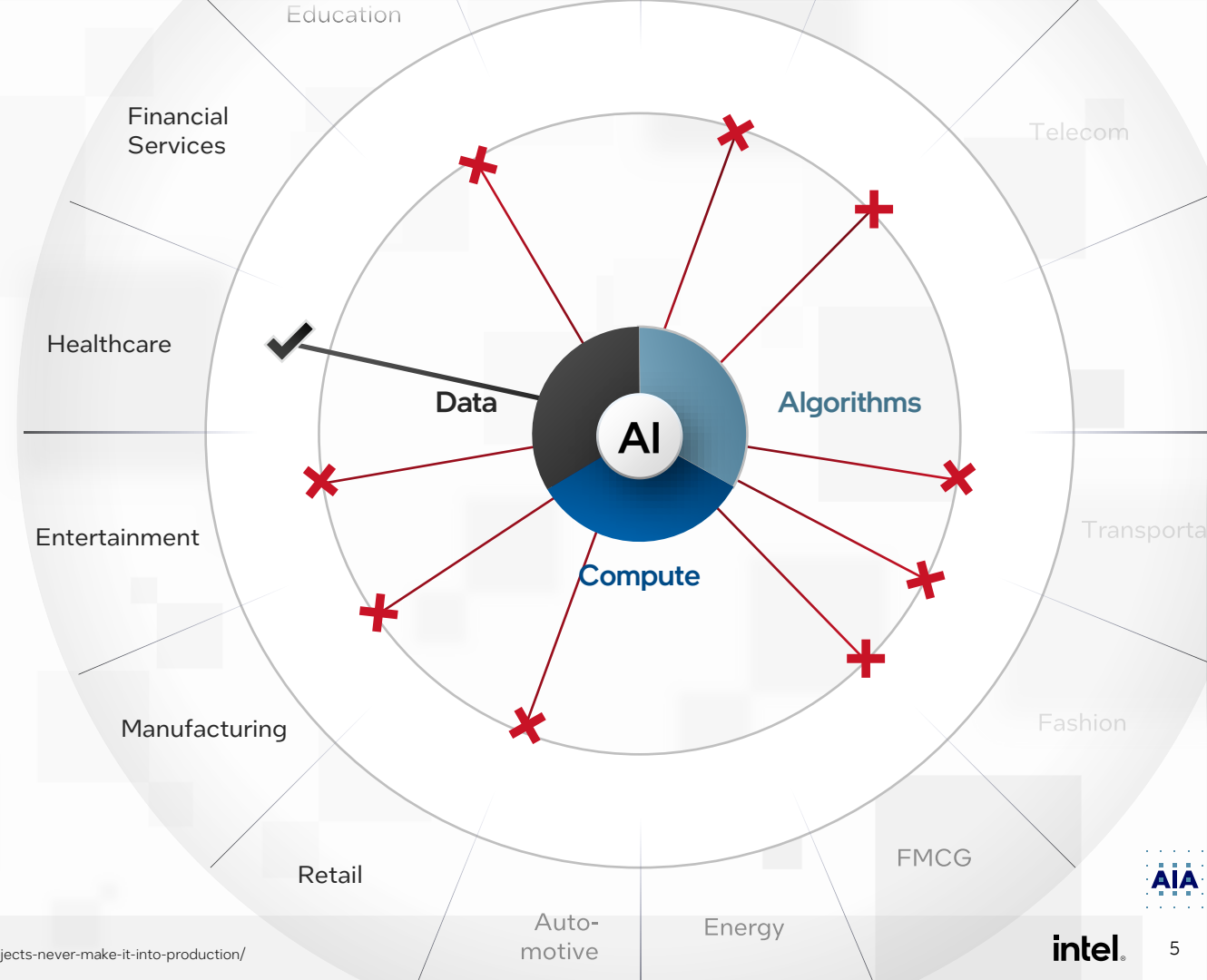


But...

87%

of AI concepts
do not make it

- Lack of Performance
- Infrastructure Maturity
- SW Complexity
- Lack of Tools

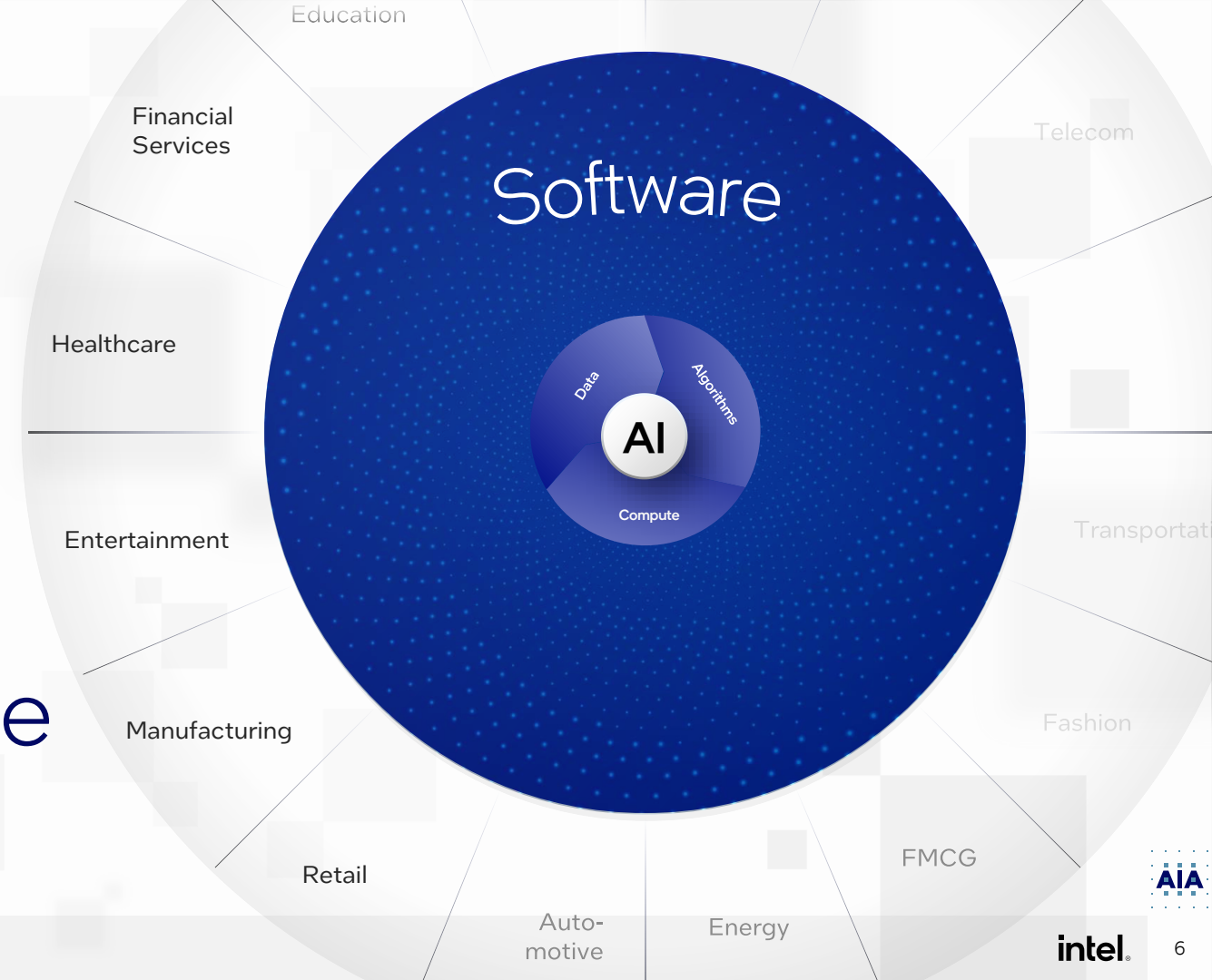


Source: VentureBeat, 2019
https://venturebeat.com/2019/07/19/why-do-87-of-data-science-projects-never-make-it-into-production/

Software is the bridge

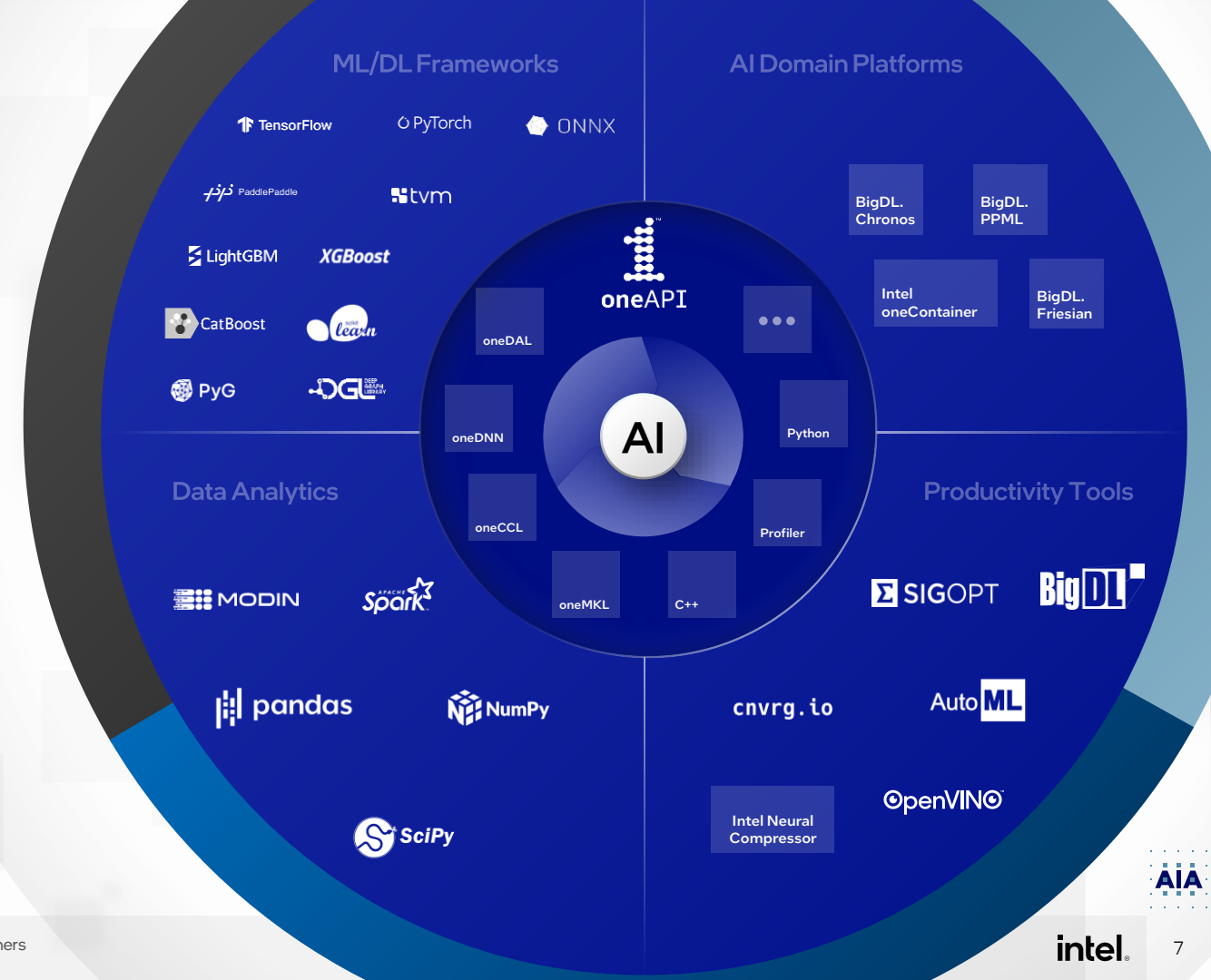
to bring

AI Everywhere



Open AI Software Ecosystem

Key Enabler

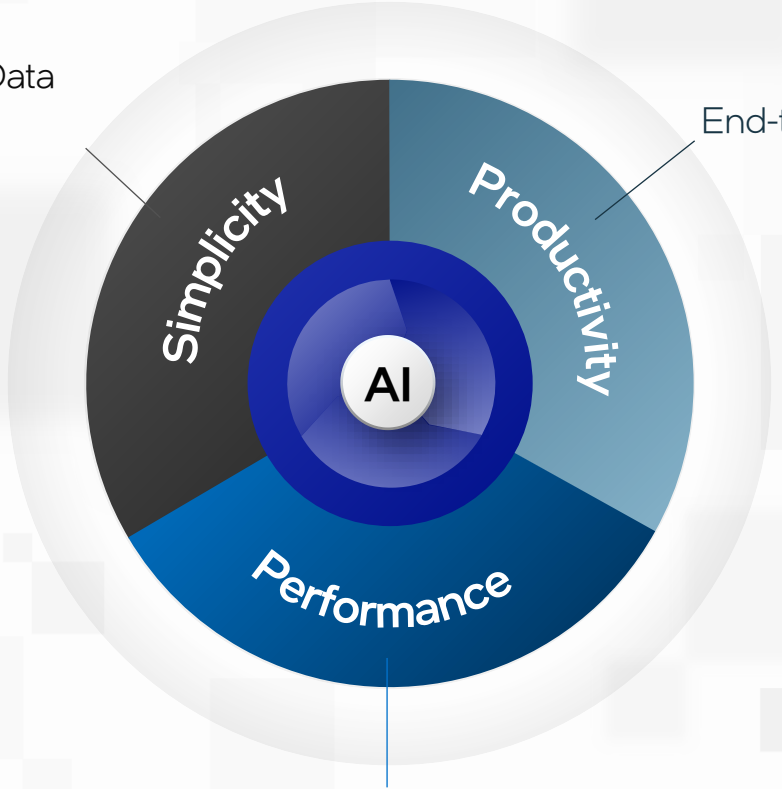


* Other names and brands may be claimed as the property of others

Intel AI Software Strategy

to deliver

Simplicity, Productivity, and Performance



Simplicity

End-to-End Solutions For Every Industry

Apply Analytics & Machine Learning

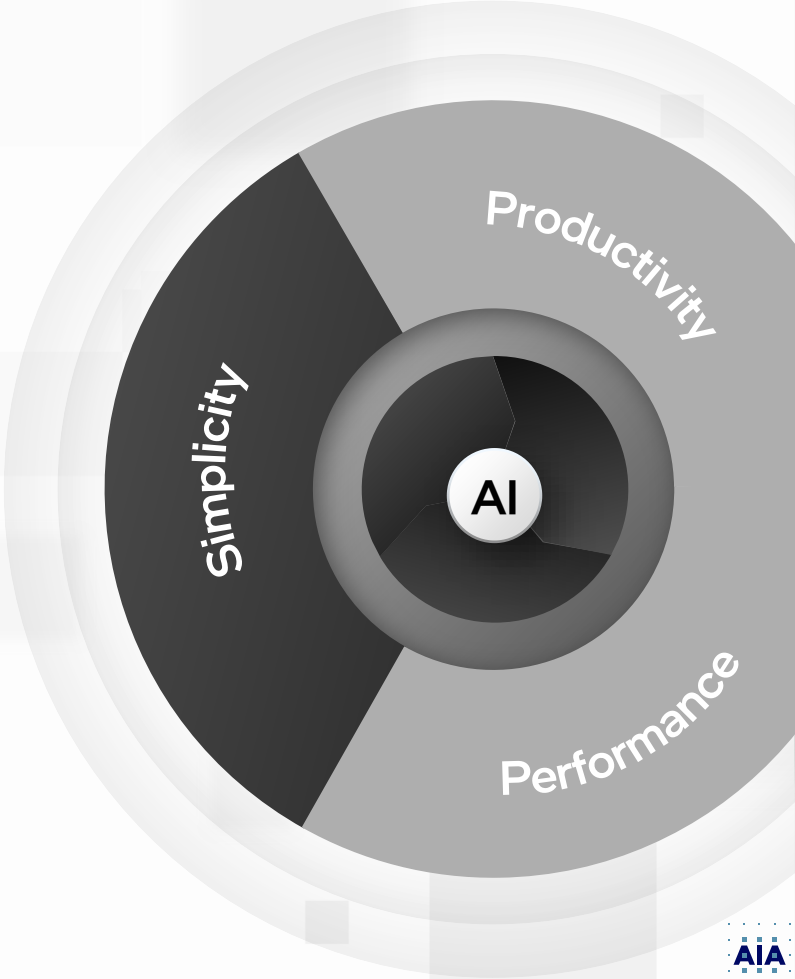
on existing Intel environment

Build & Scale Quickly

With Optimized, Ready-to deploy solutions

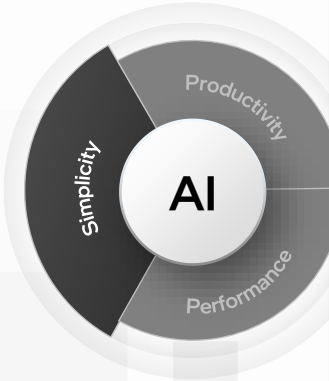
Tangible Results

Without unnecessary complexity and specialized hardware



new

intel.



Industry Use Case AI Reference Kits

Open-Source and Prebuilt AI with Meaningful Enterprise Contexts

30+

AI Reference Kits

- Predictive Asset Analytics
- Intelligent Document Indexing
- Customer Care Chatbot
- Quality Visual Inspection
- Purchase Prediction
- Fraud Detection
- Hyper-Personal Targeting
- Customer Churn Prediction
- Customer Lifetime Valuation
- Product Recomm Systems

For Companies that want to...

- Boost Existing AI/ML Solution
- Introduce Greenfield AI
- Change AI Solution Strategy

AIA

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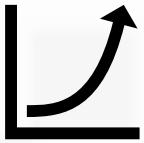
First Set of 4 Toolkits!

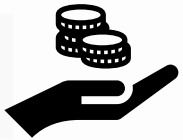
https://github.com/oneapi-src

Visual Quality Inspection	Predictive Asset Maintenance
Intelligent Document Indexing	Customer Care Chatbot

Reduced Time to Deployment



Improved Training and Inference Performance



Lower TCO

Inside Our AI Reference Kits

intel

Millions of Developers

General Developers | Data Scientists | Edge & IoT Developers | AI Developers | DL & Inference Developers | ...

AI Reference Kits

Predictive Asset Analytics | Intelligent Document Indexing | Customer Care Chatbot | Quality Visual Inspection | ...

Solution Brief | Developer Guide | Code & Data Repository | Compute Architecture | Optimization results

Leading Industry Frameworks

python™ | pandas | dmlc XGBoost | scikit-learn | PyTorch | daal4py | ...

+

Intel Optimizations & Tools

oneAPI (oneMKL, oneDAL, oneDNN, oneCCL) | ... | OpenVINO | SIGOPT | Intel Neural Compressor | AI Analytics Toolkit | ...

Download the reference kits from GitHub today!

https://github.com/oneapi-src

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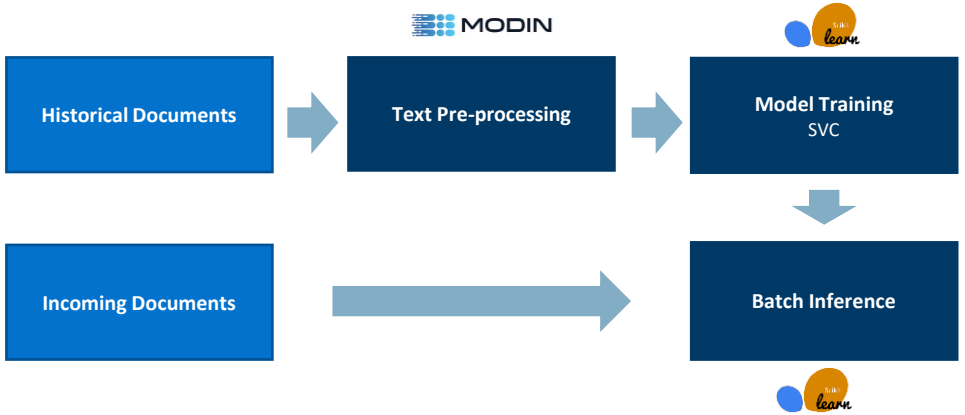
Intelligent Document Indexing

To reduce human capital costs and manual intervention for classifying massive volumes of incoming documents ingested into the organization.

Experiment: build the document classification ML pipeline using SciKit-learn/SVC and use Modin + Intel Extension SciKit-learn speed-up data processing, boost inference times and reduce training cycles.



Results

- Up to **25X** reduction in training time
- Up to **2.5X** faster Inference time
- **86%** faster data pre-processing

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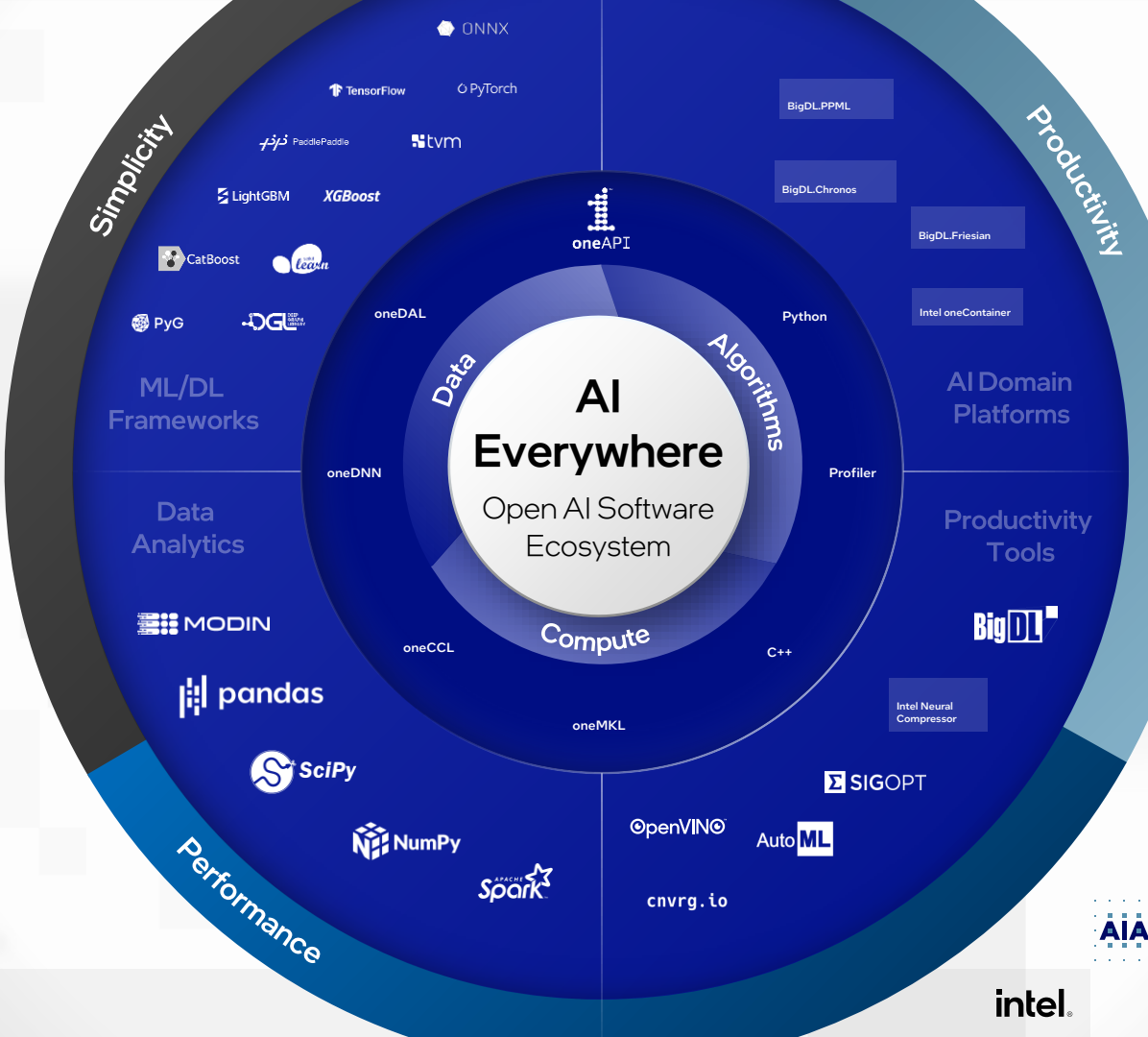
Let's work together to bring AI Everywhere

Visit developer.intel.com/ai for more info



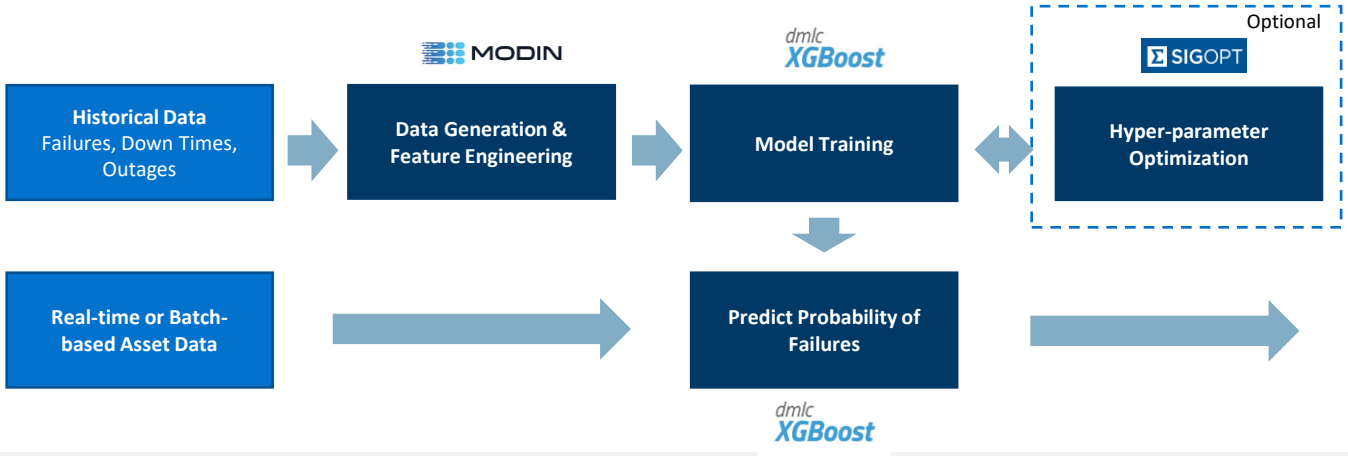
* Other names and brands may be claimed as the property of others

Thank You

Predictive Asset Maintenance

To predict the probability of failure and proactively maintain assets to avoid outages, downtimes and operational costs.

Experiment: build the predictive asset maintenance ML pipeline and use Intel oneAPI toolkits to optimize the training cycles, prediction throughput and accuracy.



Results*

- Up to **37%** reduction in training time
- Up to **70%** faster Inference time
- Up to **95%+** accuracy of prediction

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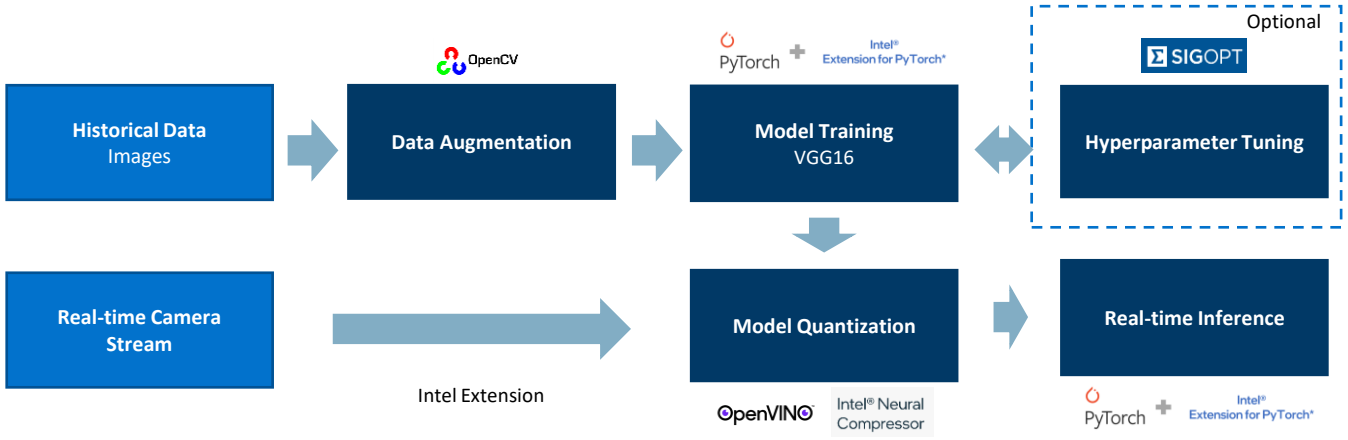
Visual Quality Inspection

Using computer vision to detect defects and reduce quality inspection costs. That requires continuous compute-intensive training and accurate inference in real-time.

Experiment: build the defect detection ML pipeline and use Intel oneAPI toolkits to boost inference times, improve accuracy, reduce model footprint and reduce training cycles.



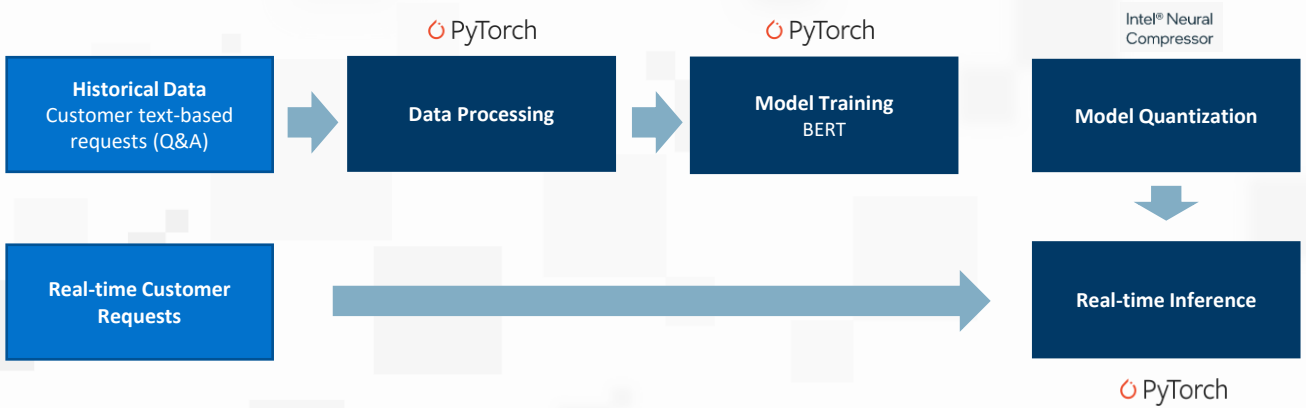
Results*

- Up to **13x** faster Inference time
- Reduction of model footprint by **75%**
- **24%** reduction in hyperparameter tuning to get to 97.7% accuracy
- Up to **20%** reduction in training time
- Accuracy Loss post quantization 0.001

Customer Care Agent Intent Enablement

To enable virtual agents to understand user intents in automated conversations using Natural Language Understanding (NLU). Customer care organizations need to reduce operational costs and yet offer a more natural and engaging conversational experience.

Experiment: build the NLU ML pipeline using airline travel dataset and PyTorch/BERT and use Intel Extension for PyTorch and Intel Neural Compressor boost inference times and reduce training cycles.



Results

- Up to **61%** reduction in customer interaction time
- Up to **16%** faster training cycles