ORACLE

Oracle Labs
Machine Learning Research Group

"The mission of the Labs at Oracle is straightforward – to identify, explore, and transfer new technologies that have the potential to substantially advance Oracle's business."

Edward Screven
Chief Corporate Architect
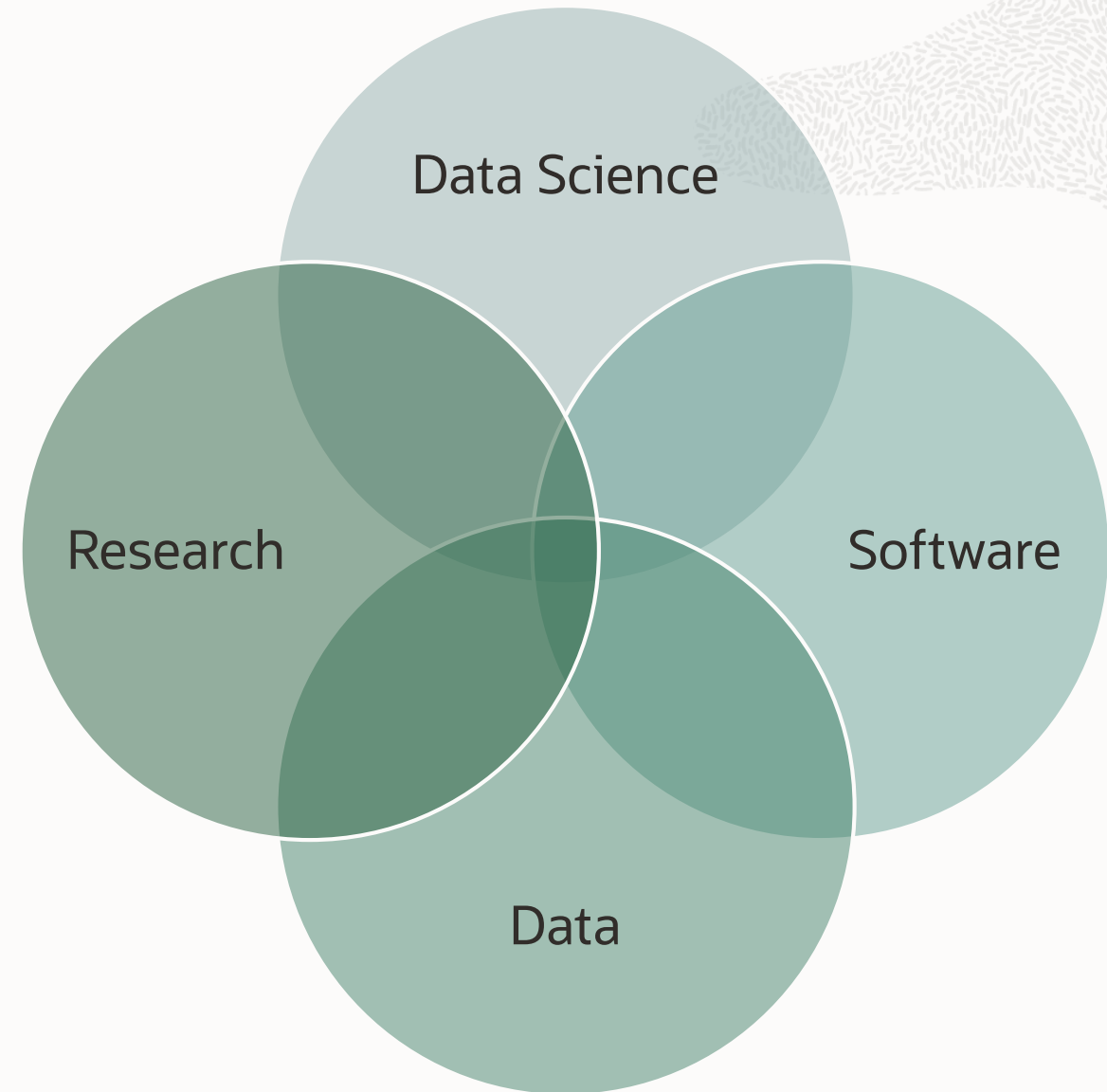
The Machine Learning Research Group

MLRG's mission is to help Oracle understand how to develop, scale, and deploy Machine Learning throughout the business

- **Building a Machine Learning community at Oracle**
  - Bringing together Data Science and Machine Learning practitioners to help foster knowledge and best practices
- Collaborating with product groups
  - Providing advice, evaluation, cooperation
- Building proof-of-concept systems
  - Transferring code and methodologies
- Helping product groups understand how to operationalize Machine Learning solutions

- Acquiring and building tools for Machine Learning
  - Tribuo ML Framework, DocView NLP toolkit, StatSim string similarity, Tenjin scalable topic modeling library, ONNX Java API
- Managing data acquisition and storage
  - The Oracle Secure Research Data Repository

The MLRG Team

Provide ML solutions by bringing together
- Research
    - Large scale contextual embeddings, fairness, privacy, mathematical foundations of ML
- Data Science
    - Understanding product group problems
    - Helping product groups build solutions
- Software
    - Inbounding and building tools for ML
- Data
    - Inbound and provide data for ML
    - Oracle Secure Research Data Repository

Data Science

Research

Software

Data

Research Interests

Core Machine Learning

- Fairness and privacy in ML, feature selection, inference techniques, supervised and semi-supervised techniques, mathematical underpinnings of ML

Statistical Natural Language Processing

- Model-based sentiment analysis, named entity recognition, entity linking, coreference resolution, product attribute extraction, large-scale embedding models

Scalable Machine Learning

- Probabilistic Programming, Parallel inference, Machine Learning on GPUs

Image processing

- Transfer learning in image recognition models for cancer detection

MLRG Collaborations

Oracle Sales

- Using Machine Learning to optimize Oracle's sales process
- Lead scoring for marketing qualified leads, Customer Journey to predict customers' cloud transition

Fusion Financials

- NLP for information extraction from invoices and expenses in Fusion Financials

Adaptive Intelligent Applications

- Evaluating fairness in ranking operations

Oracle Digital Assistant

- Building scalable embeddings to enable language understanding in chatbots