



CLOUD COMPUTING APPLICATIONS

Cloud Machine Learning: Introduction
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Machine Learning

- Include machine learning and data mining tools
 - Analyze/mine/summarize large data sets
 - Extract knowledge from past data
 - Predict trends in future data



Data Mining & Machine Learning

- Subset of Artificial Intelligence (AI)
- Lots of related fields and applications
 - Information retrieval
 - Stats
 - Biology
 - Linear algebra
 - Marketing and sales

Tools & Algorithms

- Collaborative filtering
- Clustering techniques
- Classification algorithms
- Association rules
- Frequent pattern mining
- Statistical libraries (Regression, SVM, ...)
- Others...

Common Use Cases

- Recommend friends/dates/products
- Classify content into predefined groups
- Find similar content
- Find associations/patterns in actions/behaviors
- Identify key topics/summarize text
 - Documents and Corpora
- Detect anomalies/fraud
- Ranking search results
- Others?

In Our Context...



--Efficient in analyzing/mining data
--Does not scale

--Efficient in managing big data
--Does not analyze or mine the data

**How to integrate these two worlds
together**

Machine Learning and AI in the Cloud

- Many cloud providers offer PaaS and SaaS products targeting machine learning and AI services
- PaaS for Data Science
 - Structured Data
 - Rows and columns
- PaaS / SaaS for AI
 - Vision / images
 - Voice / Audio
 - Natural language