Model Deployment

Putting your ML system into production

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Agenda

- Serializing machine learning models
- Exposing the model through Rest APIs
- Packaging for reproducibility
- Create ML pipeline
- Scaling the model

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What is model deployment?

ML model deployment is the process of publishing your model, which is currently in your local machine, to a larger user base.

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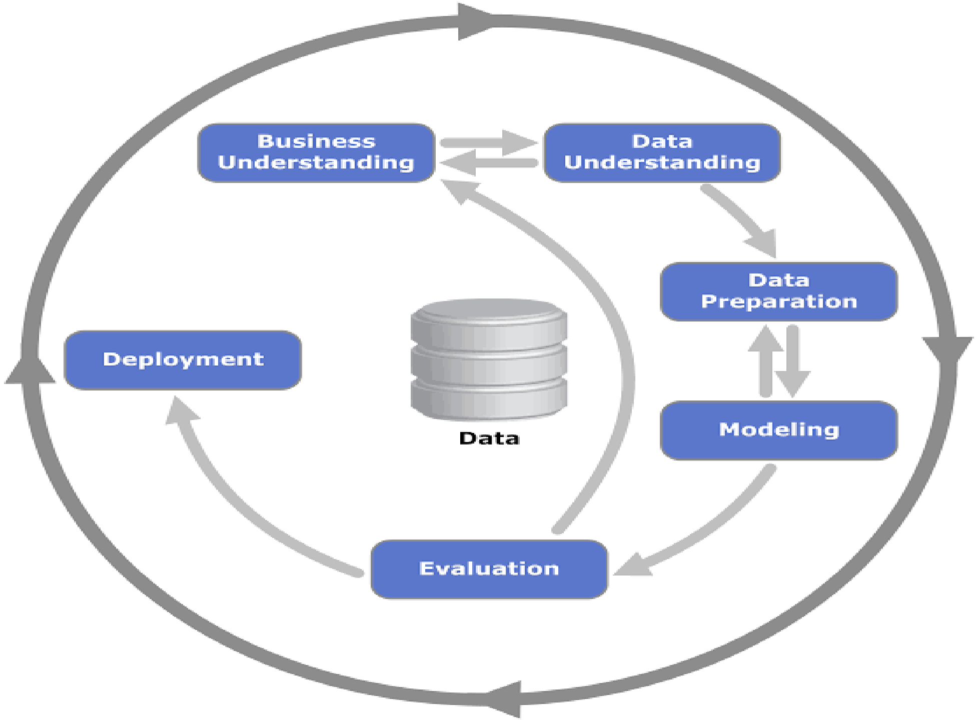
ML Process Overview



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Modes of training and serving the models

- **Train:** one off, batch and real-time/online training

- **Serve:** batch, real-time (web service, in-app, database trigger)

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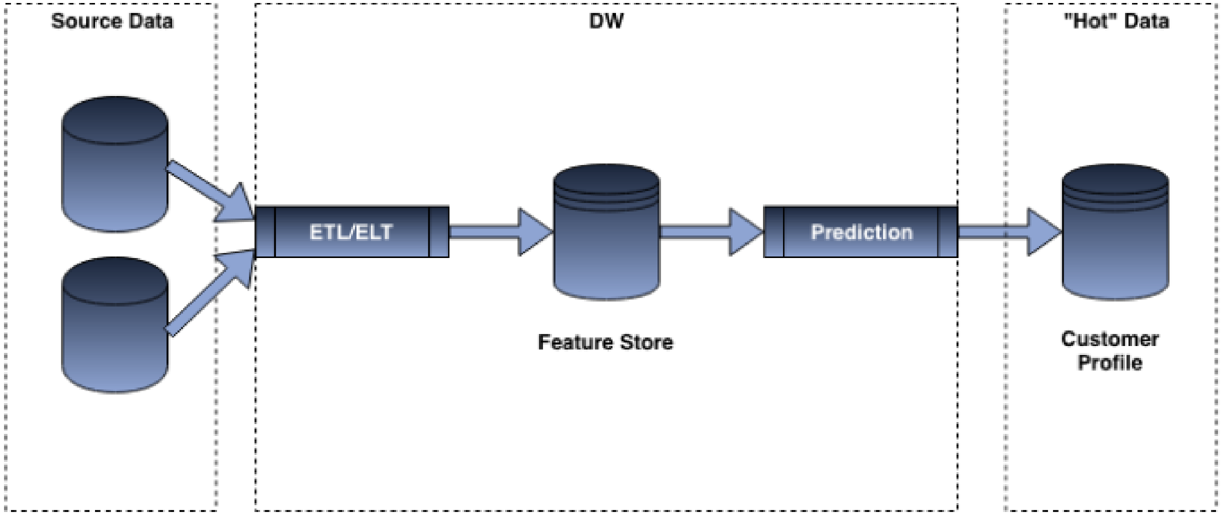
Batch prediction



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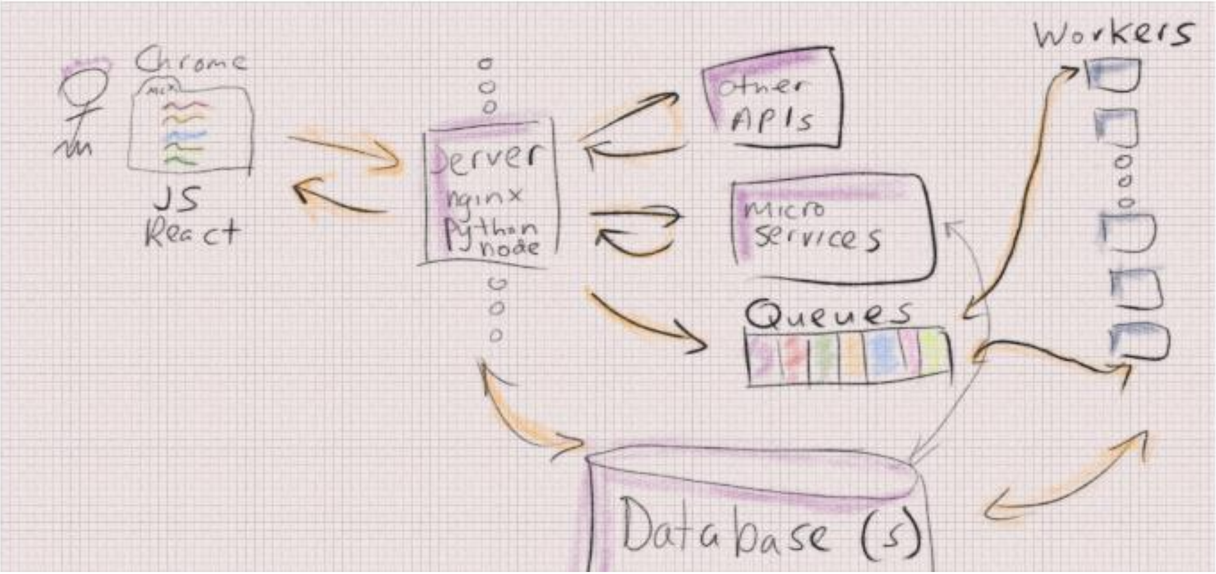
Real-time prediction



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Model serialization aka pickling

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Create REST API using flask

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Docker - what problem it solves?

- Build once and run anywhere with Docker
- No environment issues
- No OS issues
- Preconfigured environment

Source: developermemes

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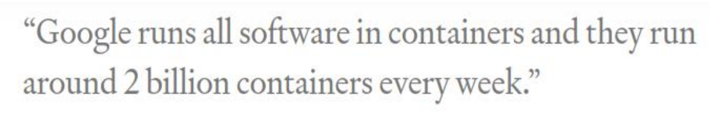
Kubernetes - why to use?

Kubernetes is an orchestration platform which enables -

- Fault tolerance
- Auto-Scale
- Load Balancing
- Rolling service updates



"Google runs all software in containers and they run around 2 billion containers every week."

Everything at Google runs in containers

Launching over **2 billion** containers **per week**

@ContainerDay16

Shipping Containers At Clyde, by Steve Gibson

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Deploy and scale docker with kubernetes

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Any Questions?

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Thank you!

Happy Learning :)

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