Reliable Data Processing
with Minimal Toil

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Photo by JESUS ECA on Unsplash
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Leads development of asynchronous compute services
An apple a day keeps the SRE away

Photo by JK Sloan on Unsplash
Haunted Graveyards
Manual Process
SRE support

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What is a Batch Job?
Correct and fresh results through

- Automated rollouts
- Validations
- Canarying
Challenges

- Large blast radius
- Data corruption
- Downstream delay
- Staleness of results
- Overloaded backend servers
- High cost
- Duplicated and divergent logic

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10 PM
Do You Know Where Your Apple Is?
Plan

1. Identification
2. Stop bleeding
3. Prioritize
4. Scale up
Safety Levels

- Automated Boss-level Populations
- Canaried
- Entire Dataset YOLO

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Automated
Boss-level
Populations
Canaried
Entire
Dataset
YOLO

Making Changes

Toil

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Benefits of Standardization

Expertise
Productivity
Incident response
Structured data

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Dry-run

Skip writing

Temp location

Permissions

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Code Deployment Schedule ...

... is not the job run schedule
Release Stages

Autopush → Staging → Production

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Stable enough?
False Positives
Two-phase mutation pattern
Start-up Tests
Data Validation

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A/B testing
good things need time
Canarying

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Normal day, the same binary runs for each target group at 6 AM.

A new binary is introduced to some users, they all start at 6 AM.

No validation errors for 1%, so more users are now added.

This run has a validation error, resulting in no promotion to the next phase.

Now there were no errors, so v2 is pushed to more users.
splitting
the
work
extending to target population
midnight
event-based processing
fresnlessness  - vs -  correctness
Julia Lee

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Leads development of asynchronous compute service
Data processing comes with a unique set of challenges and risks, but we can mitigate these with the best-practices we employ for servers.
Thanks!

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Images: unsplash.com and others (see speaker notes)