



Excavators should see

zyfra.com





Very old

-64°... +42°C

89% humidity

30G vibration

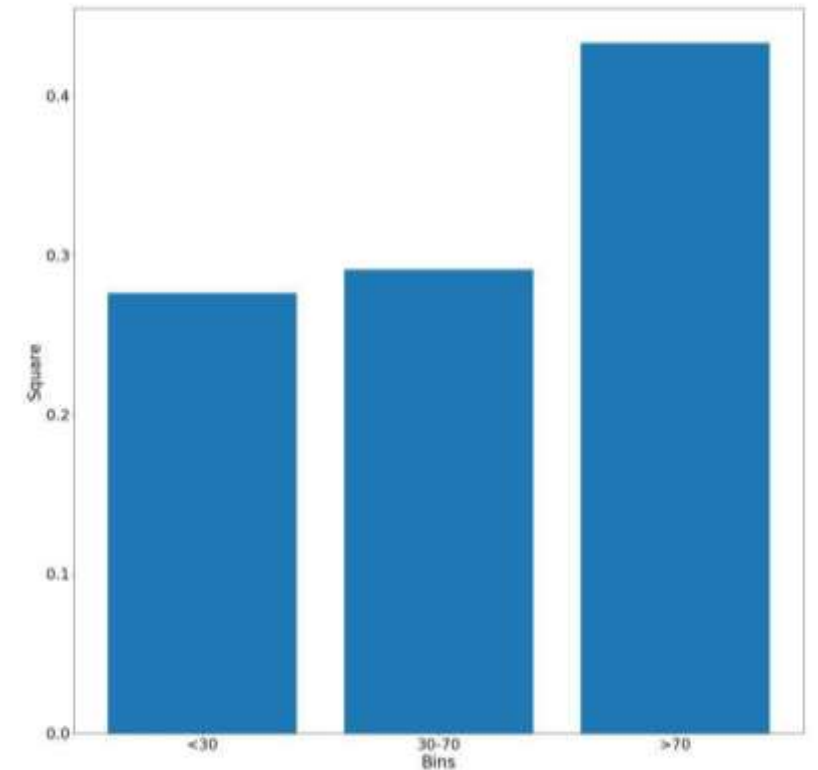
Poor network

Physical
access once
a month

**Let's do some
AI**

We measure fragmentation

- The most accurate way is to look at each bucket
- Over 1000 measurements each shift



Why do it?

- Too small fragments means overused explosives
- Too large fragments makes it difficult to excavate, transport & crush
- Enables feedback on blasting & drilling job
- Enables mine-to-mill approach

\$M 5-20
effect per mine



Параметры

Дата

10.06.2016

Смена

08:00 - 20:00

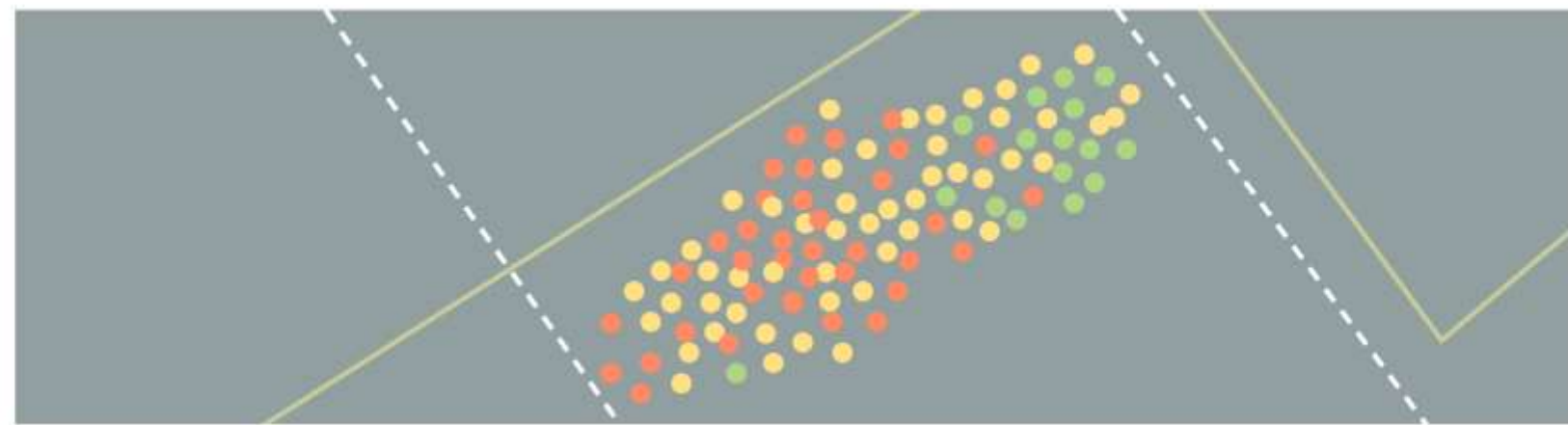
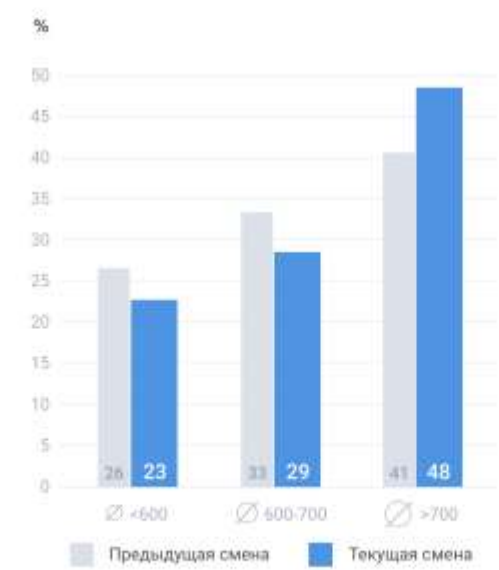
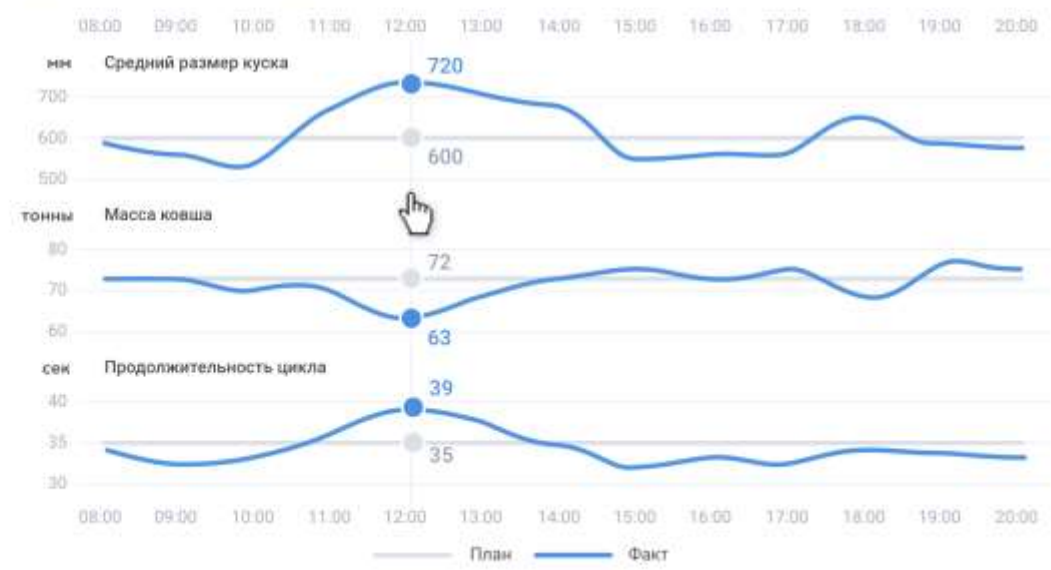
Экскаватор

Hitachi EX3600

Грансостав

Грансостав экскаватора Hitachi EX3600

Предприятие: ЗАО "Разрез Распадский", Мобильный объект: Все, На дату: 10.06.2016, Смена: 08:00 - 20:00



Обновить

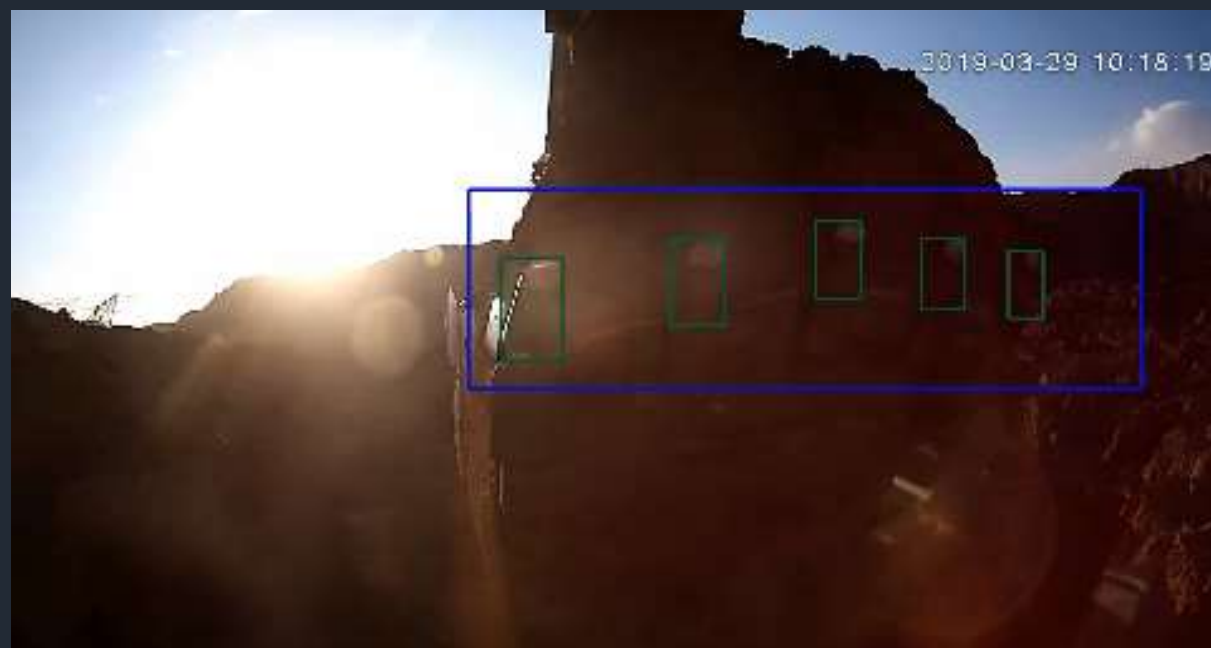
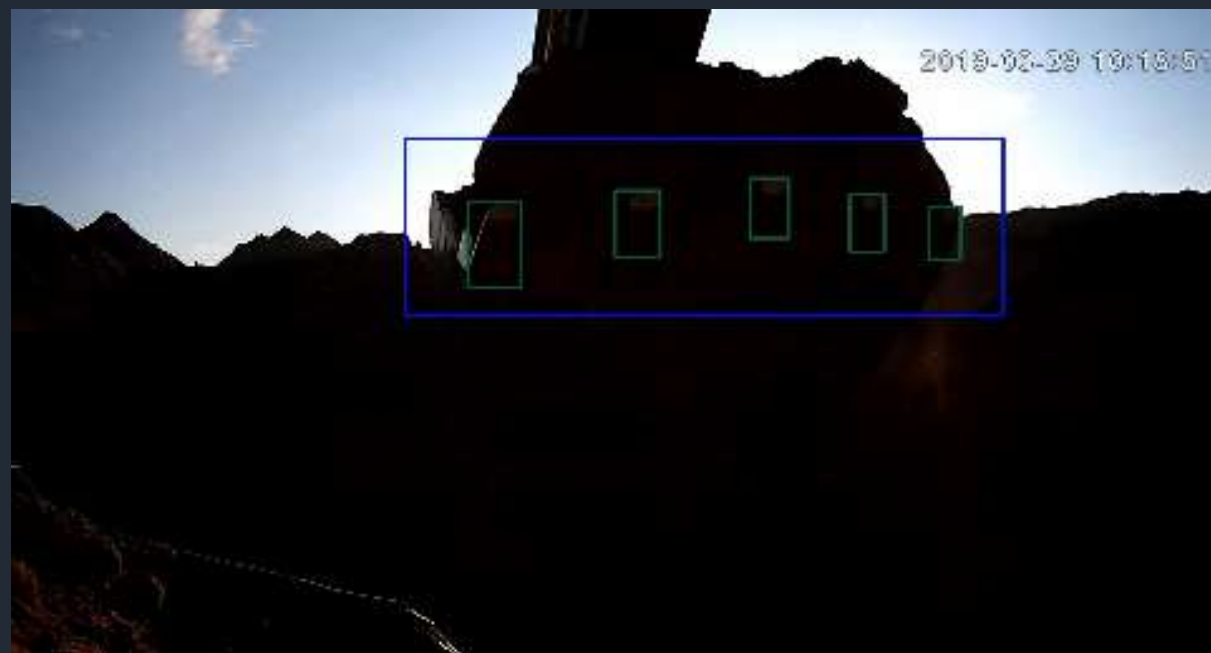
Уведомления

История



We control the teeth

- Picture: what the operator sees
- Instant reaction to the loss
- Alarm to the operator & dispatch
- In any conditions



2019-03-30 04:19:53

0.001 outer_side_good

0.153 outer_side_bad

0.566 other

0.015 inner_side_good

0.265 inner_side_bad

CAM01

Why do it?

- Tooth loss occurs
10+ times a year per mine
- Tooth can break the crusher
- This causes at least downtime
- At worst crusher repair

\$K 100-500
savings when crusher
incident prevented



Параметры

Дата

10.06.2016

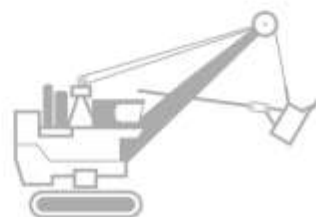
Смена

08:00 - 20:00

СОСТОЯНИЕ ЗУБЬЕВ

Текущее состояние зубьев ковша

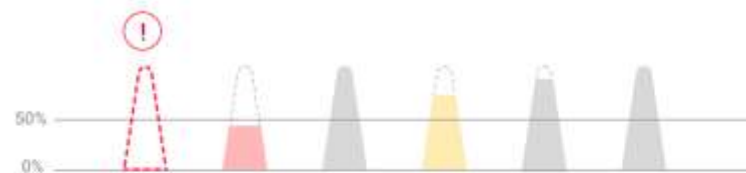
Предприятие: ЗАО "Разрез Респодский", Мобильный объект: Все, На дату: 10.06.2016, Смена: 08:00 - 20:00



Bucyrus 495hd



Komatsu PC-3000



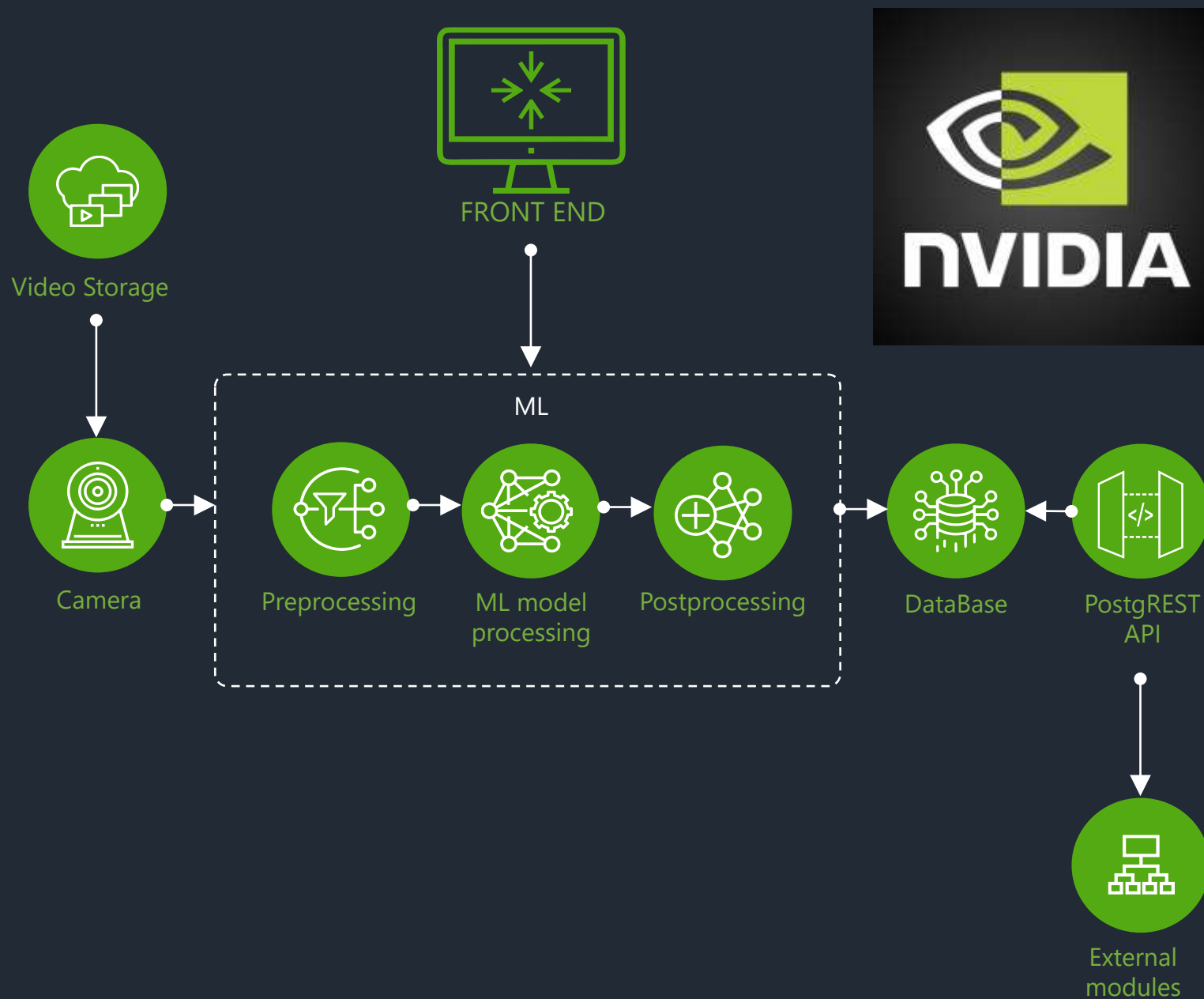
Уведомления

Экс. Komatsu PC-3000 19:36:51

На ковше не фиксируется 1 зуб 01:00:53

История

Обновить



What's inside?

- FullHD IP-camera
- NVIDIA Xavier
- Deep Learning
- Real-time inference
- API to any dispatch system

What else?

- Safety control
- Collision prevention
- Fatigue monitoring
- Automatic operations
- Remote control
- Autonomous machines





00240, Helsinki
Pasilankatu 2

+358 (0) 9 4273 4852
europe@zyfra.com

Thank you!

zyfra.ai

