nmdp
FIND CURES. SAVE LIVES.

Why You Should Think Like an End-to-end Data Scientist.

And How.

Adam Wang

End-to-end: bring ideas to life

- NMDP – We save lives through cell therapy

Patient

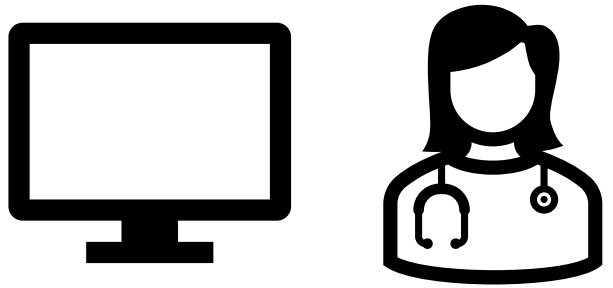
Donor

Idea	Life
Predict how ready a donor is	Show physicians in real-time

Our first foray into machine learning:

Donor Readiness Score

?



Developer

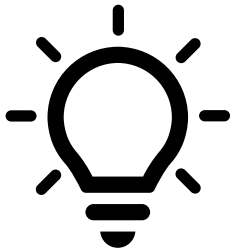
Physician End User

We tried to loop in other teams

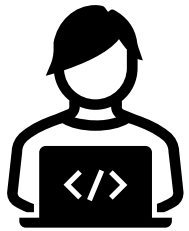
Comfort Zone

Business

Ideas



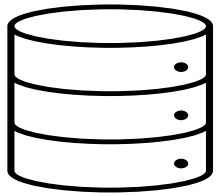
You



Handoff

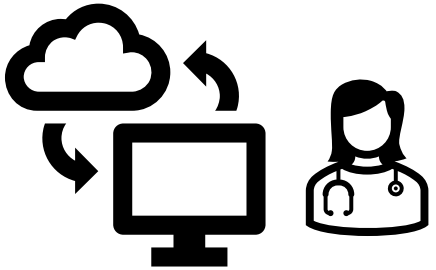
Engineering Zone

Data



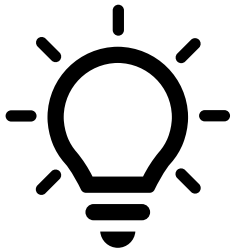
DevOps, Software

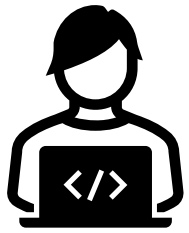
End User



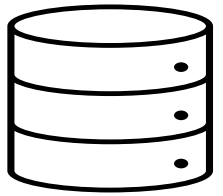
Breaking barriers led to success

Business 

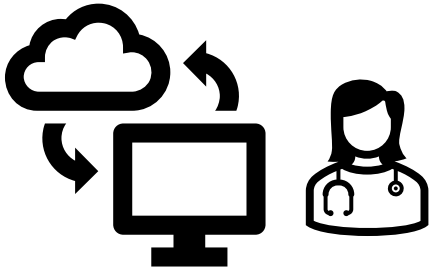
Ideas 

You 

Comfort Zone

Data 

DevOps, Software 

End User 

Why think end-to-end?

- You'll have full context
- Adding new functionality is easier
- It means you're not alone

You'll be forced to anyhow...

Donor Readiness Score Issue

Adam Wang
To: Adam Wang

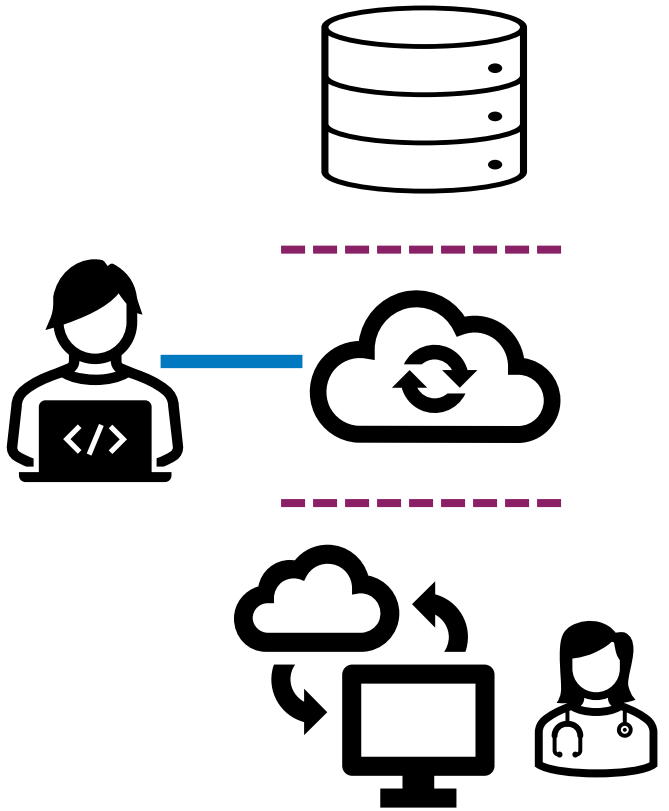
Fri 8/2/2024 12:00 PM

Adam,

I noticed that Donor Readiness Score is not populating correctly in my application UI.
Can you look into it?

Thanks,
Business Stakeholder

Reply Forward



Let’s implement email alerts

```
# score.py
score = predict(event)
if predict_failed():
    send_email(useful_message)
elif other_error():
    send_email(other_message)
```

How do we send emails from AWS to NMDP?

Remember, you're not alone

```
# score.py
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```

How do we send emails from AWS to NMDP?

Ask DevOps *how* to implement

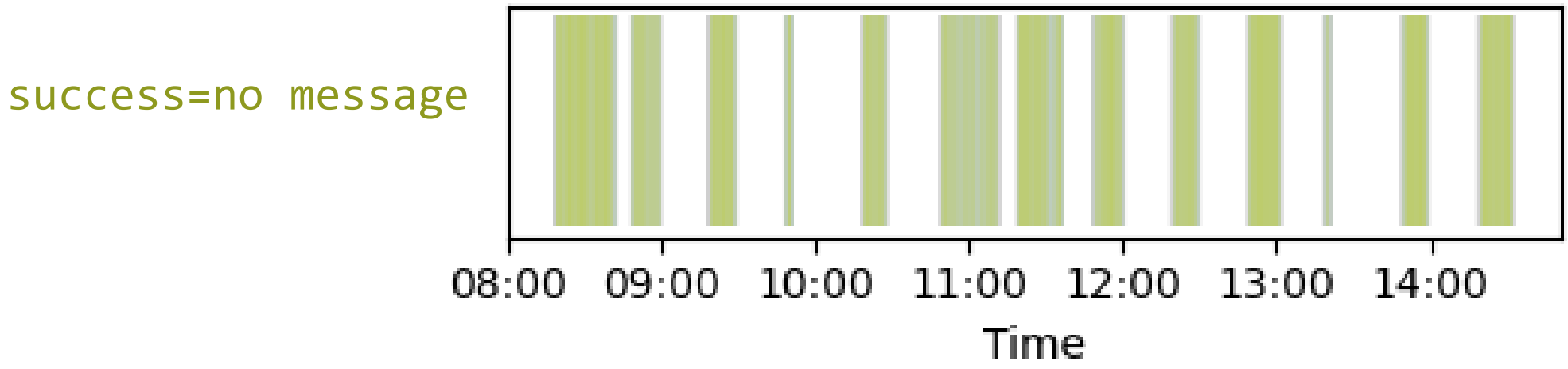
```
# sns.tf
module "sns" { ... }

resource "subscription" "alerts" {
  topic_arn = module.sns.arn
  protocol  = "email"
  endpoint  = "Email@Company.org"
}
```

Use your Data Science skills

- We noticed random failures across our Connect reports
- DevOps: Is it a Connect Issue? R issue? Resource issue?

```
# /var/log/messages
Nov 26 16:19:16 … success=no exit=-2 a0=7f6fb84ea3b0 a1=7f6f68299cc0 …
```



Use your Data Science skills

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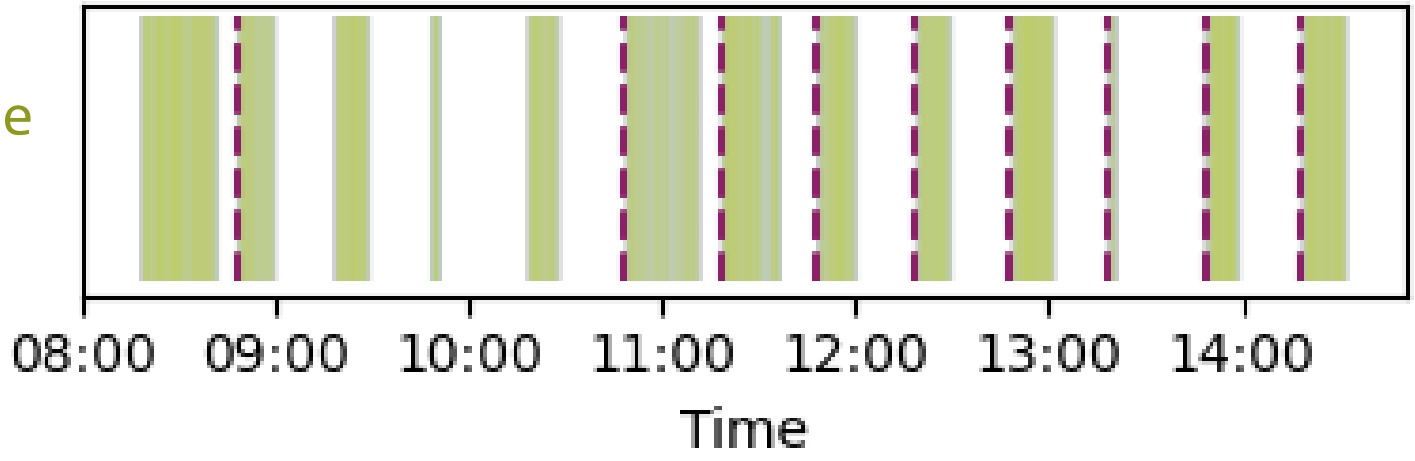
```
# /var/log/messages
Nov 26 16:19:16 … success=no exit=-2 a0=7f6fb84ea3b0 a1=7f6f68299cc0 …
```

```
success=no message
Report Failure
```



Thinking end-to-end will increase your impact

- How to start? Lead the resolution of the next issue.
- If you can learn neural networks, you can learn how data moves around!