AI / ML Won’t Save You

(In Ops)
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Twitter —
16th December
Every ddos-detection vendor: "We have AI and machine learning algorithms that detect unwanted traffic patterns!" - Me: "This is the traffic graph for one of our transits and that’s legitimate traffic." - Vendor: 😞
Sebastian Neuner
@neunerseb

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Julien Goodwin
@LapTop006

I've been tempted to write a "why ML/AI is largely useless in the ops space" talk for a conference, it's easy for me to comment on alerting & network type things, but I do wonder if there are some sensible uses.

🔗 18 2:39 AM - Dec 17, 2019 · Sydney, New South Wales
Hi, I’m Julien
Hi, I’m Julien

… and I have opinions
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here’s the short version.
Who am I to rant about this?

- Professional IT operations since 2000
- NetOps then SRE at Google since 2011
  - Everything from tiny toy services to the world’s largest network backbones & CDNs
  - These days a lot of large scale incident management
  - (And low level code yak shaving)
Alert Correlation
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- X is broken
- Y is broken
- Are they the same underlying incident?
Alert Correlation

● Yes?
  ○ Technically correct.
  ○ If I have enough redundancy I might not notice that what I thought was a diverse path isn’t.

● No
  ○ Sure I get two alerts.
  ○ Because there’s two problems.
Useful Alert Correlation

Basic rule engines can give the vast majority of value using data you already have.

- Inhibit low optical power on link down
- Inhibit link down on bundle down
- Inhibit bundle down on optical span down

Some of this can be autodetected when you don’t have a full intent data store.
Advanced Alert Correlation

Combine a prober mesh with a linear programming engine to find subtle (loss < 0.01%) breakages in a network.

No machine learning required.

Presentation:  http://s442.net/pl-deck  http://s442.net/pl-vid
Anomaly Detection
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1. Here’s a firehose of information
2. Find the interesting things.
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1. Here’s a firehose of information
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Anomaly Detection

1. Here’s a firehose of information
2. Find the unusual things.
   
   But do they matter?
Anomaly Detection

- Here’s a firehose of information
- Find the unusual things.
- But do they matter?
- At even small scale there’s always weird things in logs.
- Just storing for later grepping is more useful.
- (Do alert on things you know are bad though)
The End.

Counterexamples / Want this as a full talk somewhere?
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