

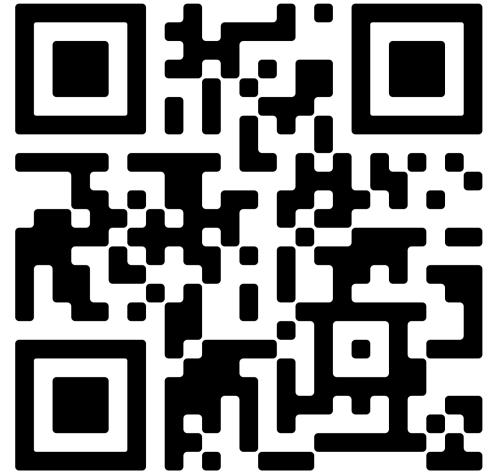


Time to get
REAL about AI

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Chris Riley
@hoardinginfo



1995 -
2001

Was an IT Pro

2001 -
2009

Developer

2009 -
now

Became an Advocate
If you can't do it, talk about it

Getting Real

- Help bring AI/ML functionality into reality
- Talk about the business and technical challenges
- Offer best practices to launching AI/ML features



The Fairy Dust!

Splunk CEO: Artificial Intelligence Does Not Exist Today



Tom Taulli Contributor 

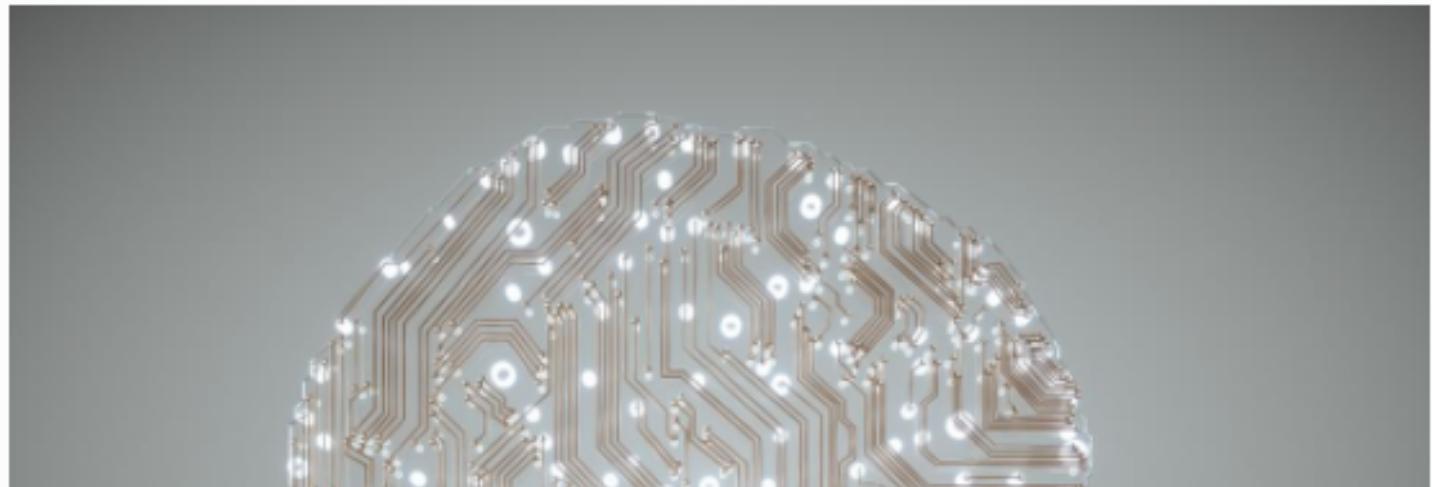
Entrepreneurs

I write about tech & finance.

f

twitter

in



Why Python for ML?

- Stable
- Good Timing
- Strong Community
- Data Scientist Friendly
- Performance (C & C++ Bindings)
- Frameworks & Libraries (PyTorch & scikit-learn)

Intelligence Easy Street



So you want to build ML into your app?

- Is it sustainable?
- Is it manageable?
- Does it support the business?

What I learned when building ML functionality

What I learned building a Genetic Algorithm SDK

- There is almost always an easier solution.

What I learned as a developer of document recognition

- Models can have long term consequences.

What I learned as a product manager of NLP

- Data scientists need to think like developers.

What I learned as an advocate at Splunk

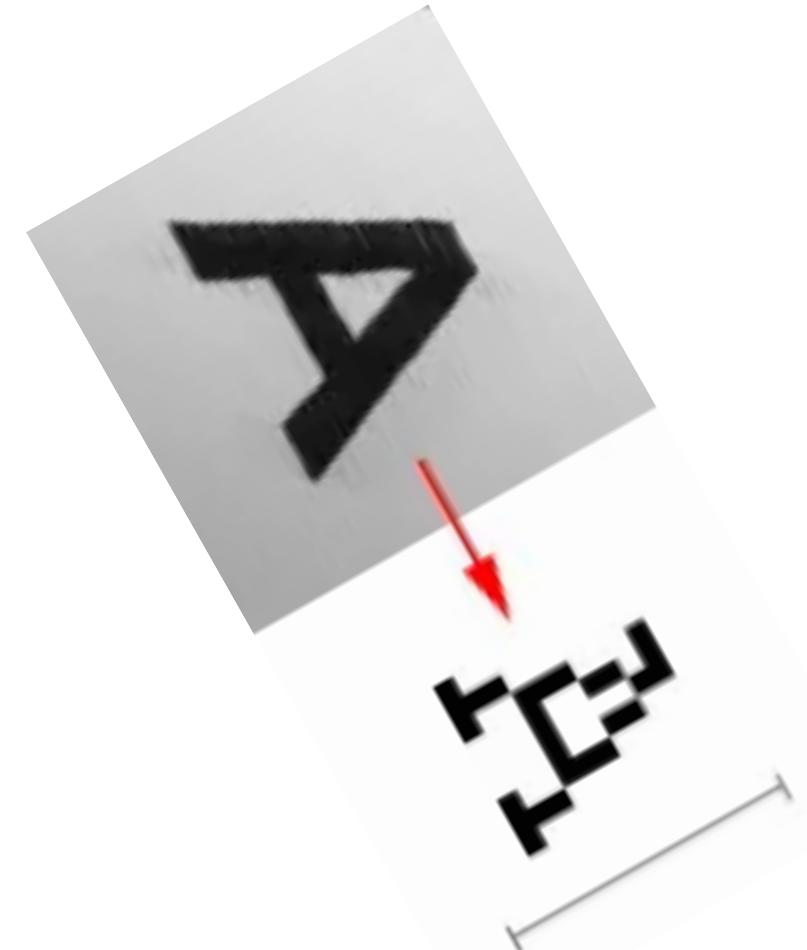
- Don't sell fairy dust.

IDR / OCR / ICR / OMR

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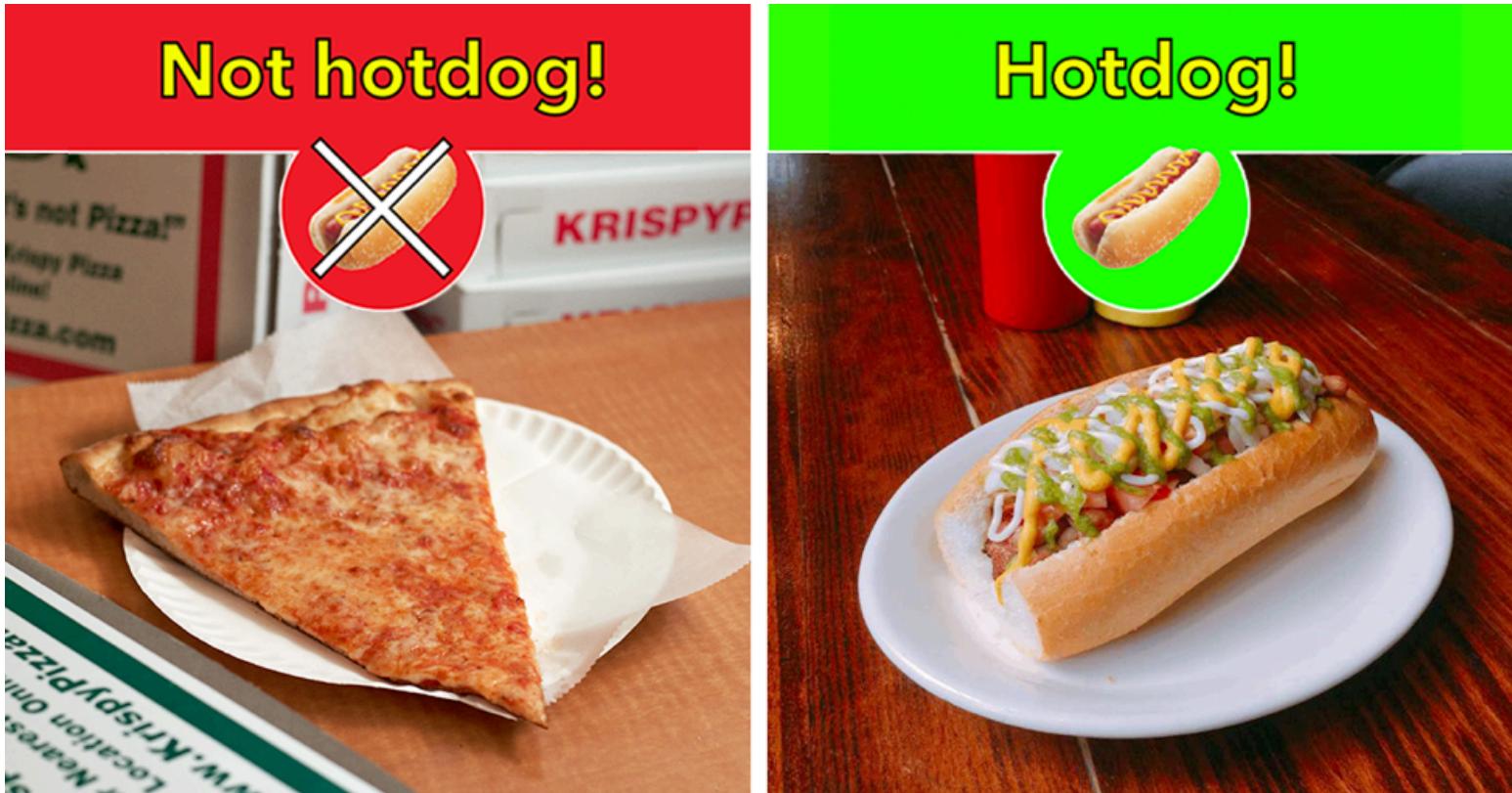
Document Recognition

- The core recognition algorithms have not changed since 1980's
- Enhancements had to be layered abstractions
 - System of experts
- The nature of the truth data changed dramatically over the years
 - High quality scan >> fax >> even higher quality photo scan
- Users spent too much time on fractional gains
- Human in the loop proved to be super effective



Model Gotchas

- Defects amplify exponentially as models grow
- Biases are eerily easy to introduce into your models
- False positives can make or break functionality
- Complexity can be fun, but also more costly than beneficial



source: HBO Silicon Valley



source: wsj.com

Artificial intelligence / Machine learning

Our weird behavior during the pandemic is messing with AI models

Machine-learning models trained on normal behavior are showing cracks — forcing humans to step in to set them straight.

by **Will Douglas Heaven**

May 11, 2020

Source: <https://www.technologyreview.com/2020/05/11/1001563/covid-pandemic-broken-ai-machine-learning-amazon-retail-fraud-humans-in-the-loop/>

Natural Language Processing

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NLP Days

- Data scientist were academically focused
- Developers were lost when deploying and maintaining models
- Go-To-Market was disjointed from end-user reality

Development Gotchas

- Spending 90% on R&D and 10% on dev is not effective
- How you deploy your models matters a lot

DATA

Do Your Data Scientists Know the ‘Why’ Behind Their Work?

by Thomas C. Redman

May 16, 2019

https://hbr.org/2019/05/do-your-data-scientists-know-the-why-behind-their-work?utm_campaign=hbr&utm_source=twitter&utm_medium=social&es_p=12060305

Go-To-Market Gotcha's

- Customers only care about the outcome
- Over selling “intelligence” can cause fear and slow adoption
- Over selling “intelligence” can lead to disappointed users



Now

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Splunk AI/ML Journey

AIOps

- Anomaly Detection
- Splunk ML Toolkit
- Auto Remediation

Incident Response

- Recommended Responders
- Similar Incidents



Recommended Responders

- Broad range of object types
- Content includes workflow
- Noise has a big impact

The screenshot shows a web interface for managing incidents. At the top, there's a header for 'raygun.com' with a timestamp 'Jun. 16 - 9:19 AM'. Below the header, there are several incident cards:

- AlertManager**: Critical alert for 'prod_puppet_failure' with ID #42180.
- Incident #42242 Resolved**: Recovery alert for 'kafka_low_traffic_out' with ID #42242.
- Incident #42241 Resolved**: Recovery alert for 'kafka_low_traffic_out' with ID #42241.
- @alecs**: A comment from user @alecs.
- @alecs**: Another comment from user @alecs.

In the center, a modal window titled 'Add Responders' is open. It contains fields for 'URL', 'Phone Number', and 'Notes'. A note at the bottom of the modal says: 'Note: If you have international phone numbers or other instructions, add them here.' There are 'Cancel' and 'Add' buttons at the bottom right of the modal.

To the right of the main content area, there are two panels: 'Details' and 'Timeline'. The 'Details' panel shows various log entries and configuration fields. The 'Timeline' panel shows a chronological list of events.

Similar Incidents

- Broad range of object types
- Content includes workflow
- Noise has a big impact
- Similar to recommendation engines
- More sensitive to false positives

Resolved
Resolved on Jun. 4 - 12:59 PM
61 Days 19 Hrs
Time to resolve

Alert Details Annotations (1) **Similar Incidents** Stakeholders

Updated a moment ago

Current Incidents
These related incidents are happening right now. You may want to approach resolving these as a single event versus individual incidents.
No Current Incidents

Past Incidents
These incidents happened in the past. They might provide clues around how you can solve this current incident.

Incident #40872 Resolved
api: raygun/portal.victorops.com
Policies: Web : Email
Resolved by: jstupplebeen
1 Annotations 6 Alerts

Incident #40774 Resolved
api: raygun/portal.victorops.com
Policies: Web : Email
Resolved by: jstupplebeen
1 Annotations 5 Alerts

Incident #40701 Resolved
api: raygun/portal.victorops.com

Message the team...
Incident #40977 Resolved
api: raygun/portal.victorops.com
Policies: Web : Email
Resolved by: jstupplebeen
Raygun Com Critical: raygun/portalvictorops.com
1 new errors have been raised within 00:05:00
Raygun Com Critical: raygun/portalvictorops.com
1 new errors have been raised within 00:05:00
Raygun Com Critical: raygun/portalvictorops.com
1 new errors have been raised within 00:05:00

“Best Practices”

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Model Best Practices

- Do not test models on truth sets or demo envs
- Less complex models with larger truth sets are often better
- Establish experiment framework
- Don't automate your initial truth set
- Deep Learning! – Be Timid
- Focus on data quality
 - Manually label your truth data
 - Watch for un-balanced classes
 - Metrics can lie, be skeptical
 - Multiple models can be beneficial – expert systems

Development Best Practices

- Spend 90% on dev & 10% on R&D
- Use your own product
- Build an experiment framework
- Treat it like any software project

Partner with product managers

Agile and DevOps

Consider how models are updated

Feature flags

Linters

Unit Testing, System Integration & Functional Testing

Microservices architecture

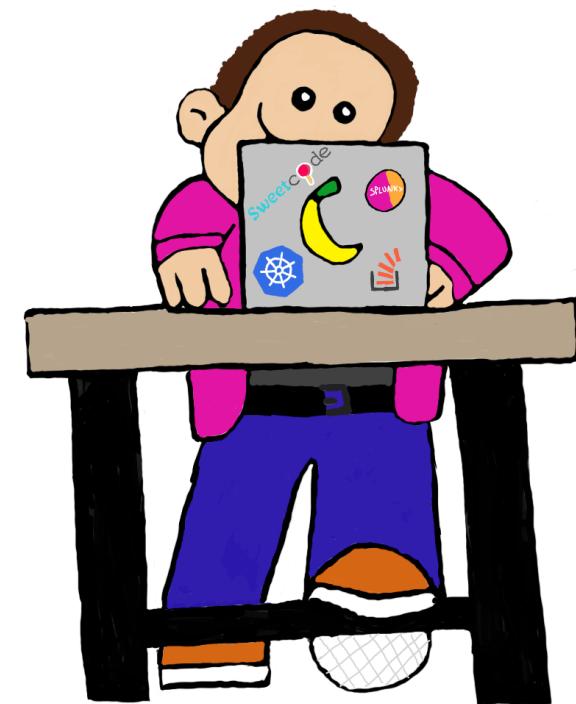
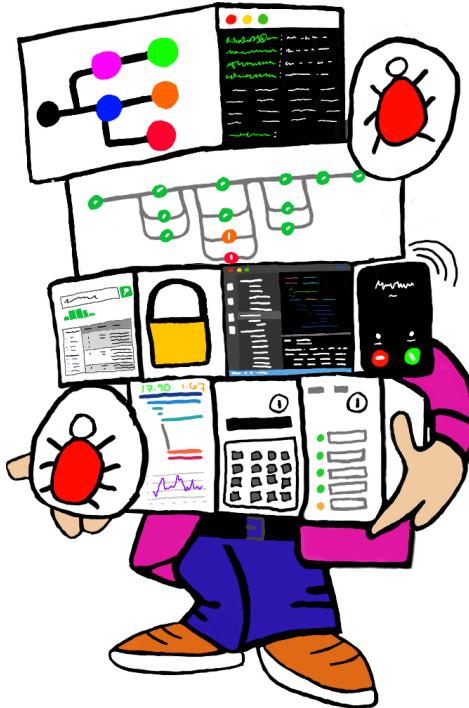
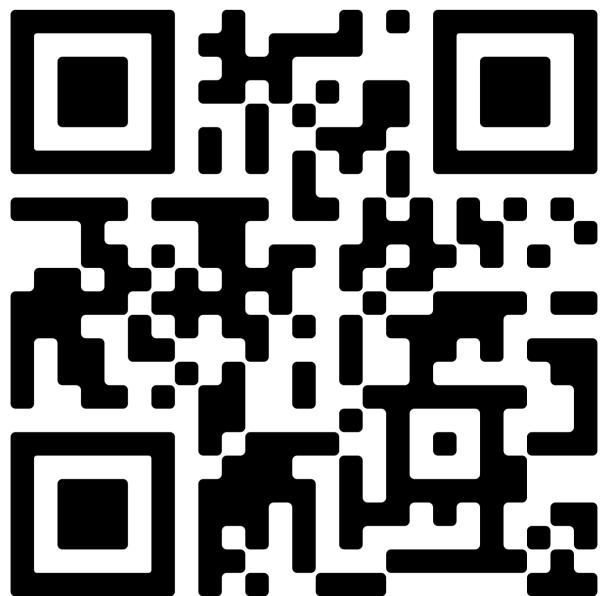
Go-To-Market Best Practices

- Sell the outcome not the magic
- Do not over promise

Resources & Interesting Projects

- <https://github.com/uber/neuropod>
- <https://github.com/microsoft/hummingbird>
- <https://github.com/ritchieng/the-incredible-pytorch>
- <https://venturebeat.com/2020/06/11/openai-launches-an-api-to-commercialize-its-research/>
- <https://pycoders.com/>
- <https://blog.piekiewski.info/2020/06/08/ai-the-no-bullshit-approach/>
- <https://dataelixir.com/>

Thank you!



Thank You

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