

Learning About Deep Learning, and Maybe a Few Other Things



Franklin Diaz, Cosmic Voyager

Introduction

What is Deep Learning, Exactly?

The Journey

Visualizations

Sources and Citations



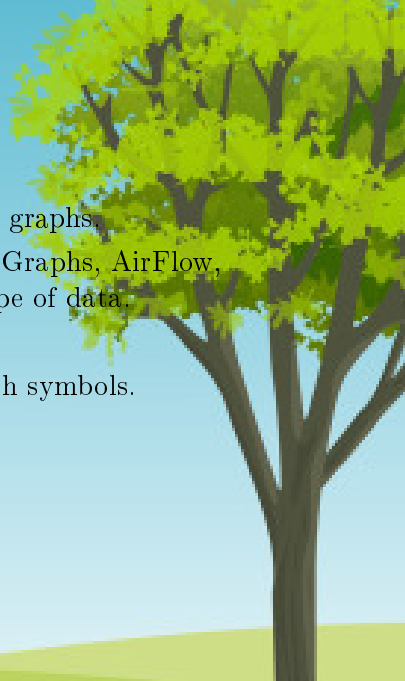
About Me

- I am a Security Consultant at Palo Alto Networks, cloud and automation for past 2+ years
- Did Data Eng/DevSecOps at Salesforce for 5 years.
- Been going to security conferences for a while.

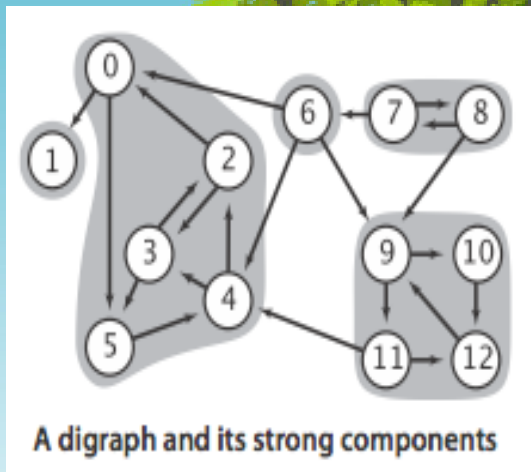
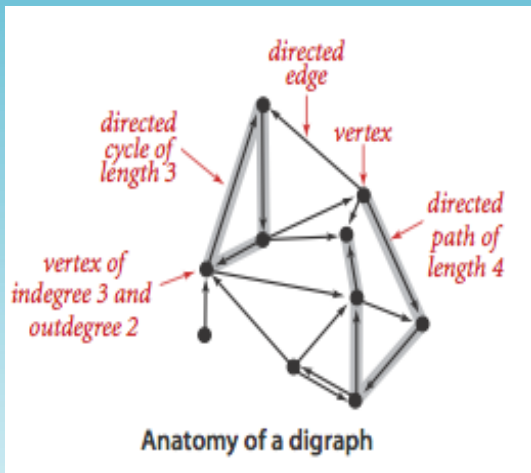


The Project

- Realized that Terraform can output directed graphs.
- Had done a lot of work at Salesforce with DiGraphs, AirFlow, etc. so I was somewhat familiar with this type of data.
- What can we do with these directed graphs?
- Try to understand all these cool looking math symbols.



What's a DiGraph?



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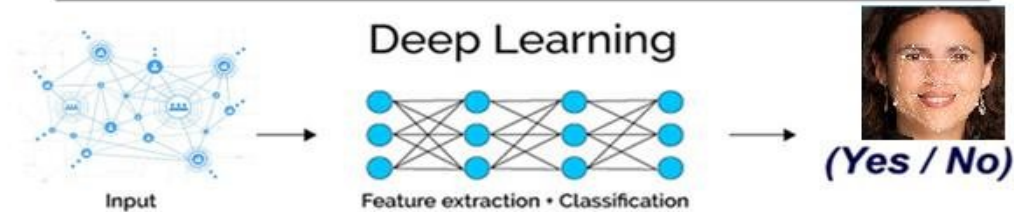
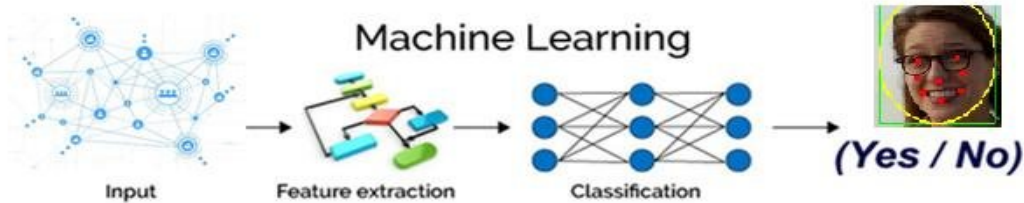
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Quick Intro to a Giant Topic



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What Have I Gotten Myself Into?

- This is an example of a list.
- Important business information.



Yak Shaving, Side Quests, Endless Rabbit Holes

- Makefiles and GNU Autotools
- NVIDIA Jetson Nano as cluster nodes
- SLURM cluster scheduler
- OpenMPI for parallel builds
- Docker and Containers
- k8s and Rancher k3s
- Data Version Control dvc.org
- Storing/accessing data in GCP buckets
- Continuous Machine Learning cml.dev
- Internal PyPI and Debian/Raspbian mirror (used too much bandwidth on home connection)



Data Collection

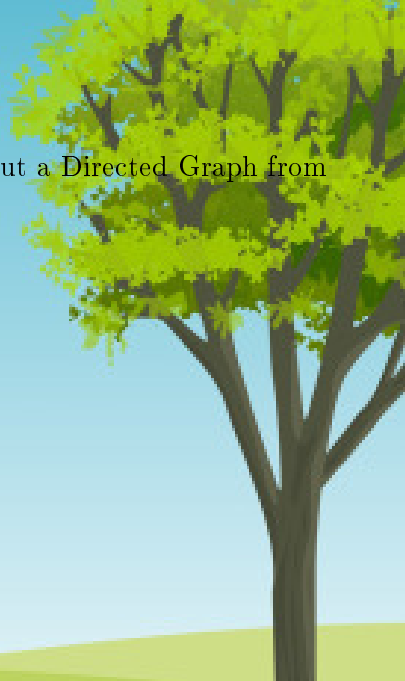
A big barrier to entry was removed by the ability to output a Directed Graph from Terraform.

```
# Generate a PNG from Terraform
```

```
terraform graph | dot -Tpng > graph.png
```

```
# Generate vector graphic from Terraform
```

```
terraform graph | dot -Tsvg -o graph.svg
```



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Figure:

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