Reading Deep Learning Papers & Career Advice

"Don't worry about it if you do not understand"

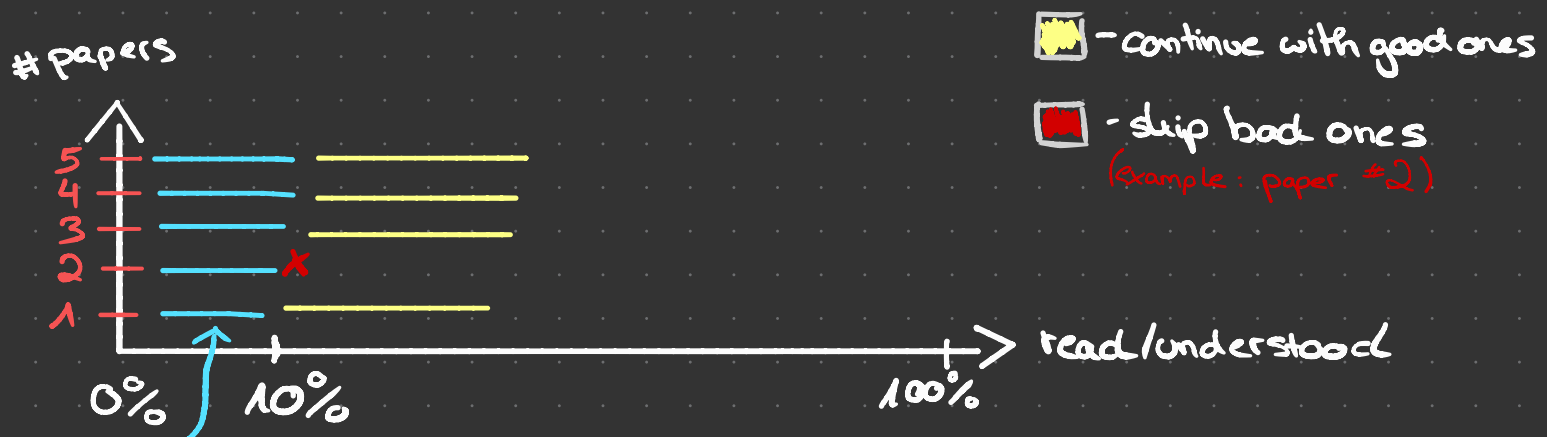
-Andrew Ng

Jousef Murad

jousefm2

Steps to take

1. Compile a list of papers (ArXiv, Medium, Blogs, Github...)
2. Skiparound list



Read 10% of each paper first!

→ Decide what papers are GOOD & BAD

Basic understanding of an area: 5-20 papers.

50-100 papers

↳ very good understanding of a topic.

How To Read 1 paper

Secret Tip from Andrew:

- Always have papers in your backpack that you can read!

Tip #1

Take multiple passes through the paper

1. Read Title / Abstract / Figures
   ⇝ sometimes enough to get a good understanding!
2. Intro + Conclusion + Figures (again more clearly) + skim rest
   - „Related Work" ⇝ Skip at beginning (maybe relevant at a later stage)
     → sometimes really hard to understand
3. Read BUT Skip Math
4. Read whole thing BUT skip parts that don't make sense *

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* not unusual!

"Great research means publishing things that are at the boundaries of our Knowledge" – Andrew Ng

⇝ if you try to get through a lot of papers simply go ahead but for deep research you can have a closer look at that stuff

(Prioritize your time!)

When You Read and Understood a Paper

1. What did the authors try to accomplish?
2. What were the key elements of that approach?
3. What can you use yourself?
4. What other references do you want to follow?

Sources of Papers

- Twitter
- ML Subreddit
- Friends
  - → if they do research or know about papers
- Conferences
  - NIPS
  - ICML
  - ICLR

Math

- Derive from scratch
  - ↳ like an artist student copying masters

(Time consuming though)

Code

- Run open source code

⇝ Deeper Level : RE-IMPLEMENT IT FROM SCRATCH

Long-Term Advice

- Learn Steadily (2-3 papers/week over year)

→ no short bursts

Andrew's Life Advice

- choose things that allow you to work on learning the most!

& do important work

- whatever you will learn early in your career will pay off

Career Advice - Navigate in ML

Goal

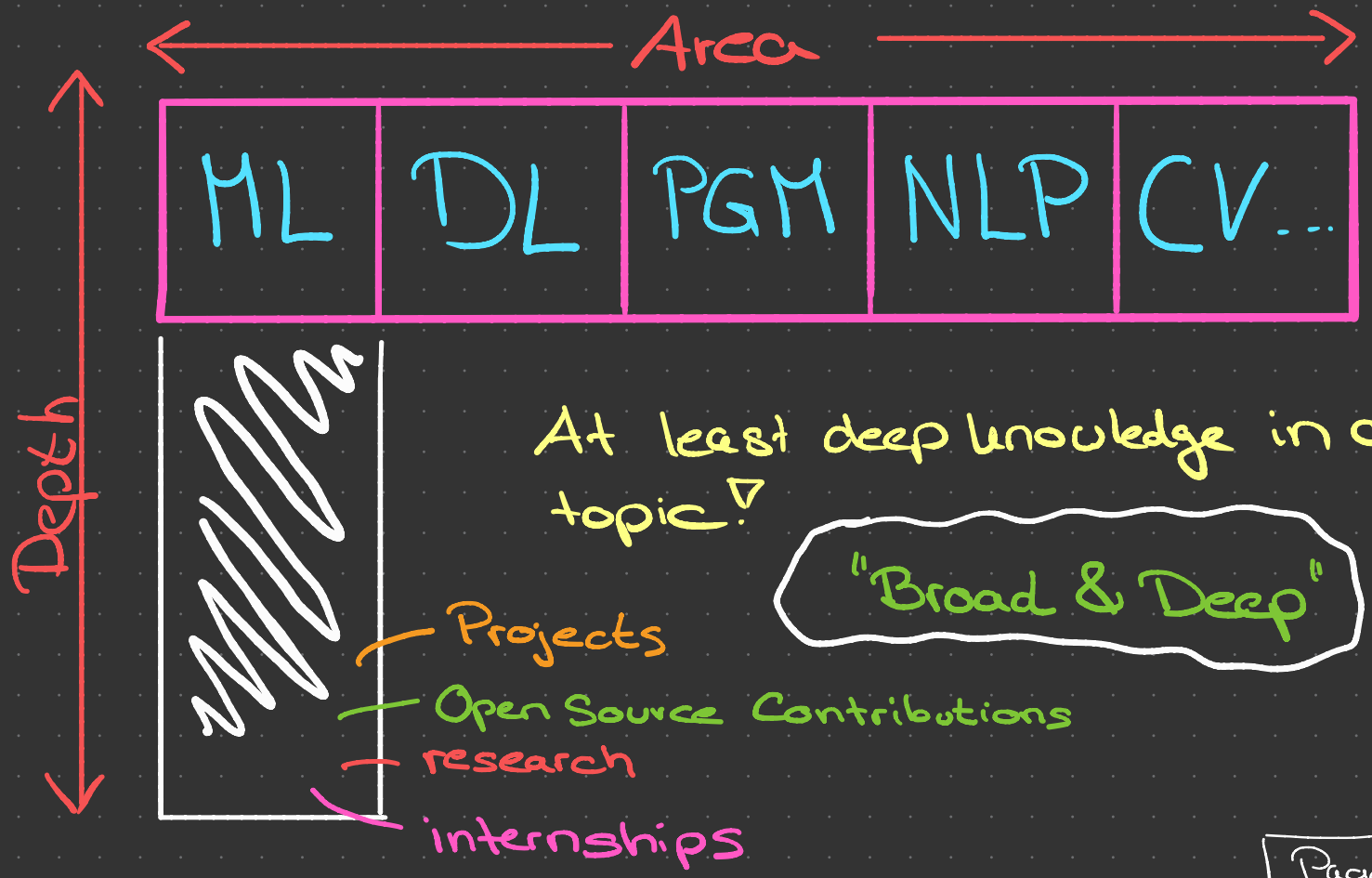
- Job (big company or startup)
- Phd

Do important work!

1. How to get a position
2. Select a position

WHAT DO RECRUITERS LOOK FOR?

- skills (ML quiz, coding ability....)
- meaningful work (did you also apply what you learned?)



At least deep knowledge in one topic!

"Broad & Deep"

DONTS

- Just Doing Courses → | ML | ... | .. | .. | ... |

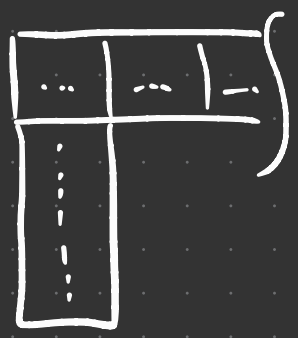
"Not terrible but also not great"

- "Also do not jump straight into depth on day 1"

- | ML | .... | .... | ... |

tiny projects and not 1 significant one

"Recruiters are **NOT** impressed by volume"



→ How to build breadth?

→ coursework!

→ Reading!

How to build depth?

→ Relevant Projects

Saturday Morning Problem

Read Paper vs. Work on Research vs. Open Source vs. TV

⇝ Although having worked hard Saturday & Sunday

→ Monday: "Haven't got any better in ML"

↳ no short-term reward

Solution: "Consistency!"

Selecting A Job

- work with great people / projects

"Show me your friends, I'll show you your future"

- focus on the team you'll interact with (10 - 30 persons)

- Most influential: Manager

→ Don't focus on the brand! (weak correlation)

50,000 person company

300 person AI team

-> good choice!

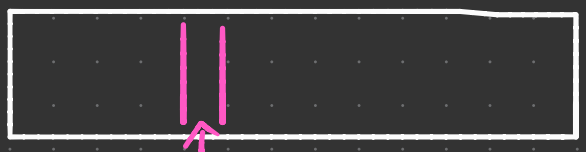
even better (~30 people)

~> you know the people

Take care if you hear about

Rotation Programs

(-> different if they say you can rotate and join a specific team)



10,000 People company

- not well known
- but excellent AI work

100 AI people

very good choice

"Brand of your Resume matters less & less"

– Andrew Ng