

How to Cook a Paper: from Recipes to Dishes

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2021.11.12

How do you cook?

1. Find recipes
2. Read & learn recipes
3. Design your recipe
4. Get your hands dirty
5. Cook!
6. Dish up
7. Serve
8. Wash the dishes



How do you **cook a paper?**



1. Find recipes
2. Read & learn recipes
3. Design your recipe
4. Get your hands dirty
5. Cook!
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- 1. Find papers**
- 2. Read papers**
- 3. Have a research idea**
- 4. Experiment**
- 5. Write your paper**
- 6. Submit your paper**
- 7. Rebuttal & revision**
- 8. Followups**

How do you **cook a paper**?



Reimplementing
other people's
work is a good
starting point.



Practice,
practice,
and practice!

- 1. Find papers**
- 2. Read papers**
- 3. Have a research idea**
- 4. Experiment**
- 5. Write your paper**
- 6. Submit your paper**
- 7. Rebuttal & revision**
- 8. Followups**

1. Find papers – for purpose



You want to learn a research topic

/make sure nobody has done it

/find reference

- Read survey/sok papers (lucky)
- Google Scholar with keywords, find 3-5 recent papers
- Read the related work sections
- Find shared citations and repeated author names
→ popular papers and researchers
- Go to their websites and see where they've published recently → top conferences



1. Find papers – as a habit

But you also need to keep a good habit:

Always be keen to new and good papers!

- Regularly watch for the good source:
 - The big-4: IEEE S&P, Usenix Security, CCS, NDSS
 - Top conferences/journals in related fields
 - Best/distinguished papers
 - Science/Nature papers
 - Website/google scholar of good researchers/teams
 - Know their rating: CCF推荐排名
 - Know their timeline: sec-deadline, confsearch
- Learn from **good papers** that you enjoy reading

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(● 网络与信息安全)

A类

序号	刊物名称	刊物全称	出版社	地址
1	TDSC	IEEE Transactions on Dependable and Secure Computing	IEEE	http://dblp.uni-trier.de/db/journals/tdsc/



《2020-2021中国计算机科学技术
发展报告》发布

https://www.ccf.org.cn/Academic_Evaluation/By_category/

Google Scholar profile



Nicholas Carlini

Google Brain

Verified email at google.com - [Homepage](#)

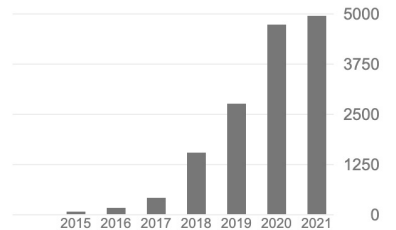
[FOLLOW](#)

[GET MY OWN PROFILE](#)

TITLE	CITED BY	YEAR
Towards evaluating the robustness of neural networks N Carlini, D Wagner 2017 IEEE Symposium on Security and Privacy (SP), 39-57	4356	2017
Obfuscated gradients give a false sense of security: Circumventing defenses to adversarial examples A Athalye, N Carlini, D Wagner ICML 2018	1804	2018
Adversarial examples are not easily detected: Bypassing ten detection methods N Carlini, D Wagner Proceedings of the 10th ACM Workshop on Artificial Intelligence and Security ...	1185	2017
Mismatch: A holistic approach to semi-supervised learning D Berthelot, N Carlini, I Goodfellow, N Papernot, A Oliver, CA Raffel Advances in Neural Information Processing Systems, 5050-5060	907	2019
Audio adversarial examples: Targeted attacks on speech-to-text N Carlini, D Wagner 2018 IEEE Security and Privacy Workshops (SPW), 1-7	697	2018
Hidden Voice Commands. N Carlini, P Mishra, T Vaidya, Y Zhang, M Sherr, C Shields, D Wagner, ... USENIX Security Symposium, 513-530	502	2016

Cited by

	All	Since 2016
Citations	14907	14700
h-index	31	31
i10-index	36	36



Public access

[VIEW ALL](#)

0 articles	12 articles
not available	available

Based on funding mandates

Sec-deadline

Security and Privacy Conference Deadlines



Countdowns to top Security and Privacy conference deadlines.
To add/update a conference, [send in a pull request](#).

Last update: 5 November 2021

☒ Security ☒ Privacy ☒ Crypto

S&P (Oakland) 2022

IEEE Symposium on Security and Privacy
May 22 – 26 2022 // [San Francisco, California, USA](#)

22 days 04h 03m 25s

Deadline: 3 Dec 2021, 7:59:59 pm
Three deadlines

ICICS 2022

The 24th International Conference on Information and Communications Security
Sept 05 – 08 2022 // [University of Kent, Canterbury, UK](#)

131 days 04h 03m 25s

Deadline: 22 Mar 2022, 7:59:59 pm

AsiaCCS 2022

ACM Asia Conference on Computer and Communications Security
May 30 – June 3 // [Nagasaki, Japan](#)

09 days 04h 03m 25s

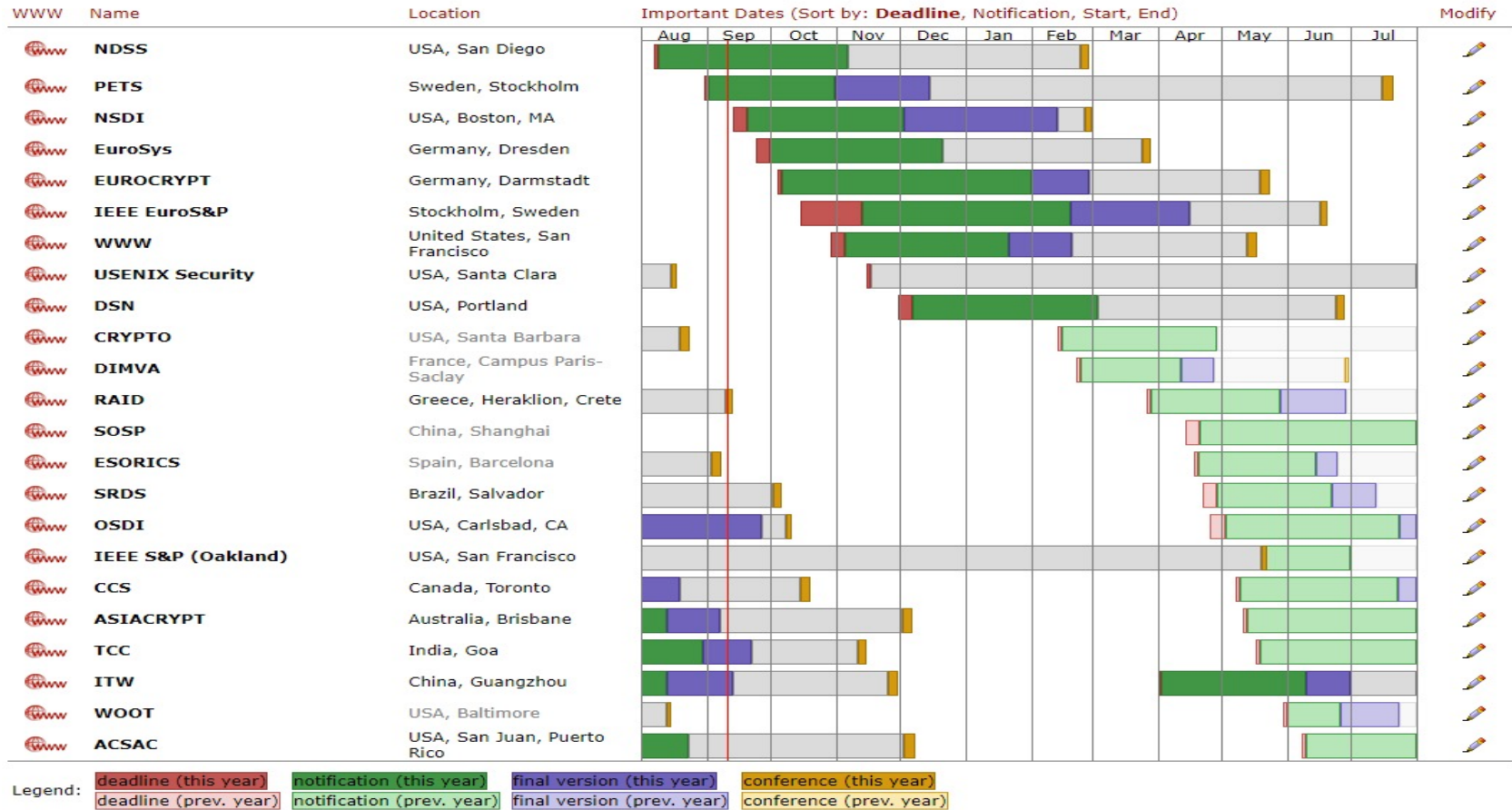
Deadline: 20 Nov 2021, 7:59:59 pm
2 review cycles

Confsearch

[switch to textual view](#)

Security

[add/remove conference](#)



This data is provided by www.confsearch.org, a search tool for computer science conferences.

Paper management

Manage your papers with reference managers

- Zotero/Mendeley/Endnote ...

The screenshot shows the Zotero application window. On the left, the 'My Library' sidebar lists various folders, with 'Colonial Medicine' expanded. The central pane displays a list of papers with columns for Title, Creator, and Year. The paper 'Circulation of Medicine in the Early Modern Atlantic World' by Cook and Walker (2013) is selected. The right pane shows the 'Info' tab for this article, detailing its metadata.

Title	Creator	Year
Guerre, maladie, empire. Les services de santé militaires en ...	Zaugg	2016
Officiers de santé et soignantes créoles face à la fièvre jaune	Nobi	2016
The Emergence of Tropical Medicine in France	Osborne	2014
Colonial Disease, Translation, and Enlightenment: Franco-Briti...	Charters	2014
Trading in Drugs through Philadelphia in the Eighteenth Centu...	Wilson	2013
The Medicines Trade in the Portuguese Atlantic World: Acquisi...	Walker	2013
Leprosy and Slavery in Suriname: Godfried Schilling and the Fr...	Snelders	2013
Medical Experimentation and Race in the Eighteenth-century ...	Schiebinger	2013
The Circulation of Bodily Knowledge in the Seventeenth-centu...	Gómez	2013
Circulation of Medicine in the Early Modern Atlantic World	Cook and Walker	2013
Synthesis of scholarship on "medicines" to restore focus o...		
Full Text PDF		
Colonial Medical Encounters in the Nineteenth Century: The Fr...	Thoral	2012
Networks in Tropical Medicine: Internationalism, Colonialism, a...	Neill	2012
Early Clinical Features of Dengue Virus Infection in Nicaraguan...	Biswas et al.	2012
Medicine in an age of commerce and empire: Britain and its tr...	Harrison	2010
Finding the "Ideal Diet": Nutrition, Culture, and Dietary Practi...	Neill	2009
Battles of the Self: War and Subjectivity in Early Modern France	Pichichero	2008
The Experiments of Ramón M. Termeyer SJ on the Electric Eel ...	de Asúa	2008
Psychiatry and Empire	Mahone and Vaughan	2007
Medicine and the Market in England and Its Colonies, C.1450-...	Jenner and Wallis	2007
Matters of exchange: commerce, medicine, and science in the...	Cook	2007
A Horrible Tragedy in the French Atlantic	Rothschild	2006
"Neither of meate nor drinke, but what the Doctor alloweth": ...	Chakrabarti	2006
Transnationalism in the colonies: Cooperation, rivalry, and rac...	Neill	2005
Variolation, Vaccination and Popular Resistance in Early Coloni...	Brimmes	2004
"Syphilis, Opiomania, and Pederasty": Colonial Constructions ...	Proschan	2003
Choosing Scientific Patrimony: Sir Ronald Ross, Alphonse Lav...	Guillemin	2002
Madness and Colonization: Psychiatry in the British and Frenc...	Keller	2001
The Colonial Machine: French Science and Colonization in the ...	McClellan and Rego...	2000
From medical astrology to medical astronomy: sol-lunar and pl...	Harrison	2000
Disease and Empire: The Health of European Troops in the Co...	Bynum	2000

Info Notes Tags Related

Item Type: Journal Article
Title: Circulation of Medicine in the Early Modern Atlantic World
Author: Cook, Harold J.
Author: Walker, Timothy D.
Abstract: The search for powerful drugs has caused people and commodities to move around the globe for many centuries, as it still does...
Publication: Social History of Medicine
Volume: 26
Issue: 3
Pages: 337-351
Date: 2013/08/01
Series: Soc Hist Med
Series Title: Soc Hist Med
Series Text: en
Journal Abbr: Soc Hist Med
Language: en
DOI: 10.1093/shm/hkt013
ISSN: 0951-631X
Short Title: https://academic.oup.com/shm/article/26/3...
Accessed: 1/24/2018, 10:17:12 AM
URL: https://academic.oup.com/shm/article/26/3...
Archive: y m d
Loc. in Archive: Library Catalog
Call Number: Rights
Extra: Date Added: 1/24/2018, 10:17:12 AM
Modified: 1/24/2018, 11:50:15 AM

And most importantly,



always share!

With the lab or your group/team members

2. Read papers



A typical researcher will likely spend hundreds of hours every year reading papers.

You read other papers so that

- You are learning what papers are like
- You are currently in the field
- You maybe writing a survey (literature review)
- You want to find what to compare with
- You review papers for a conference

We follow a **3 pass reading approach**

Borrowed from Keshav at Waterloo and Jon Crowcroft at Cambridge

2. The three-pass approach



The three pass approach:

- The *1st* pass gives you a **general idea** about the paper
- The *2nd* pass lets you grasp the paper's **content**, but **not its details**
- The *3rd* pass helps you understand the paper **in depth**

Do not drown in details before getting a bird's-eye-view!

2. Read paper – Pass 1



Structural overview of paper

- Carefully read the title, abstract, and introduction
- Read the section and subsection headings, but ignore everything else
- Read the conclusions
- Scan references noting ones you know

2. Read paper – Pass 1 output

- You can now answer the *five Cs*
 - Category: What type of paper is this (category defines methodology)
 - Context: What other papers/projects relate to this?
 - Correctness: Are the assumptions valid?
 - Contributions: What are the **key novel scientific** contributions?
 - Clarity: Is the paper well written?
- Takes about 5 minutes
- Adequate for papers that aren't in your research area, but may someday prove relevant

2. Read paper – Pass 2



- Check integrity of paper
 - Look carefully at figures, diagrams and other illustrations
 - Note unfamiliar references for further reading
 - Do not check proofs/experimental details yet
- Takes ~ 1 hour
- You should be able to summarize the paper, with supporting evidence, to someone else now
- Appropriate for a paper in which you are interested, but does not lie in your research specialty

2. Read paper – Pass 3



- Virtually **re-implement** the paper
 - *Think as the author*
 - Challenge every assumption in every statement
 - Think how you would present a particular idea
 - Think adversarially about experiments, proofs, simulation scenarios
 - Ideas for future work
- Takes 4-5 hours for beginners, 1 hour for experienced readers
- You should be able to reconstruct the entire paper from memory and identify its strong and weak points

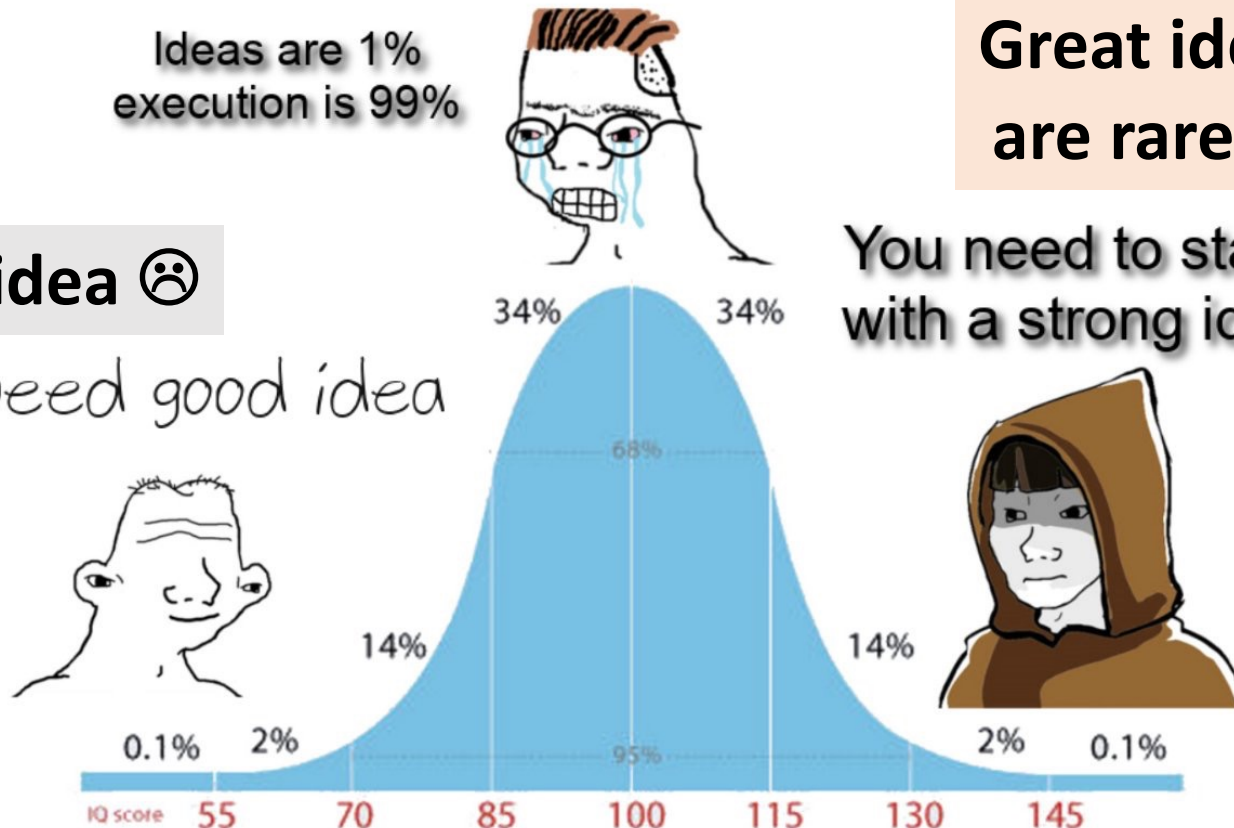
3. Have a research idea



Ideas are cheap. Execution is expensive. 😊

No idea 😞

need good idea



PhD 1-2 Y

PhD 2-4 Y

PhD 4+ Y

3. Have a research idea



Methods to have an idea:

- **Read extensively and find the unsolved problems**
 - Example: liveness detection

梳理法

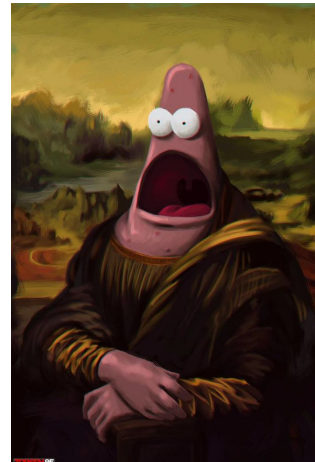
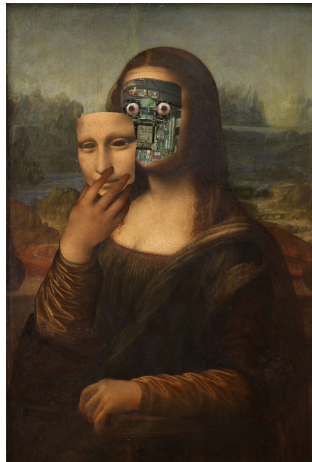
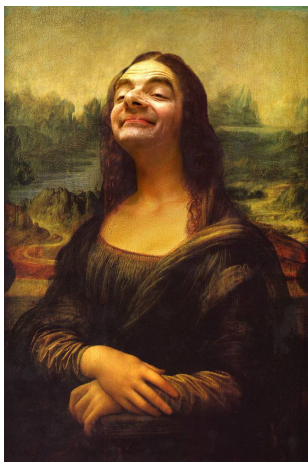
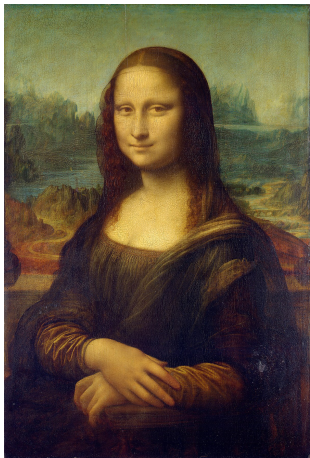


3. Have a research idea



Methods to have an idea:

- **Read extensively and find the unsolved problems** 梳理法
 - Example: liveness detection
- **Read in-depth and explore new directions** 发散法
 - Example: lightcommand, poltergeist, eararray, ultracom



3. Have a research idea



Methods to have an idea:

- **Read extensively and find the unsolved problems** 梳理法
 - Example: liveness detection
- **Read in-depth and explore new directions** 发散法
 - Example: lightcommand, poltergeist, eararray, ultracom
- **Interesting phenomenon in life** 好奇法
 - Example: bluenote, ghost touch, capspeaker
- **Find and solve real world problems** 现实法
 - Example: voiceprint, fakewake, dewicam, dehirc
- **Just try, maybe things do not turn out as expected** 尝试法
 - Example: dolphinattack, AE, tesla, rolling shutter
- **Ideas just come to you** 天才法

Advice 1: Relax, open mind, think, brainstorm, and discuss

Advice 2: Remember to write down your idea at any time!

4. Experiment

A few tips:

- It is definitely worthwhile to know your tools first.
- Learn quick with practice. Only learn systematically when you have time.
- Focus on your goal. Do not chase after butterflies.
- Keep a good track of your time and progress.
- Do not give up easily.
- Actively ask for advice.
- Be devoted. Achieve your goal at any cost!

5. Write your paper

How to write a good paper?

Tools:

- Write in LaTeX, no matter what
- Manage your code and paper with Git
- Remotely host your code and paper and collaborate with others on Github

5. Write your paper - LaTeX

- Typeset your paper correctly and beautifully
- You do need to spend some time learning LaTeX, but the typesetting results are visibly better

No ligature

efficient

efficient

Correct ligature



Word

L^AT_EX

5. Write your paper - LaTeX

- Get started
 - Books: *LaTeX Tutorials*, *The Not So Short Introduction to LaTeX 2e*
 - Advice: <https://github.com/dspinellis/latex-advice>
 - Package install: MiKTeX, proTeXt, Texlive, or MacTeX
 - Local editors: TeXstudio, WinEdt, TeXmaker, TeXworks, or editors (e.g., in Sublime Text)
 - Online editor: overleaf
- Tips
 - Put different sections into different .tex files and input them in the main .tex file
 - Put figures, .tex files, templates into different folders
 - Include all temporary files and your paper.pdf into .gitignore

5. Write your paper – Git(hub)

- Version control is important!
- Git repositories help you to track all histories and collaborate with others
- Difference between Git and Github
- Learn Git
 - Books: *Pro Git* (<https://git-scm.com/book/en/v2>)
 - Tutorials: too many online
- Use git with Github – a hands-on guide

About version control

- What is “version control”, and why should you care?
- Get crazy when you can’t find earlier texts after saving and exiting word?
- Tired of endless file.v1 .v1.1 .v1.1.1 v1.2 v1.2.1?
- Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

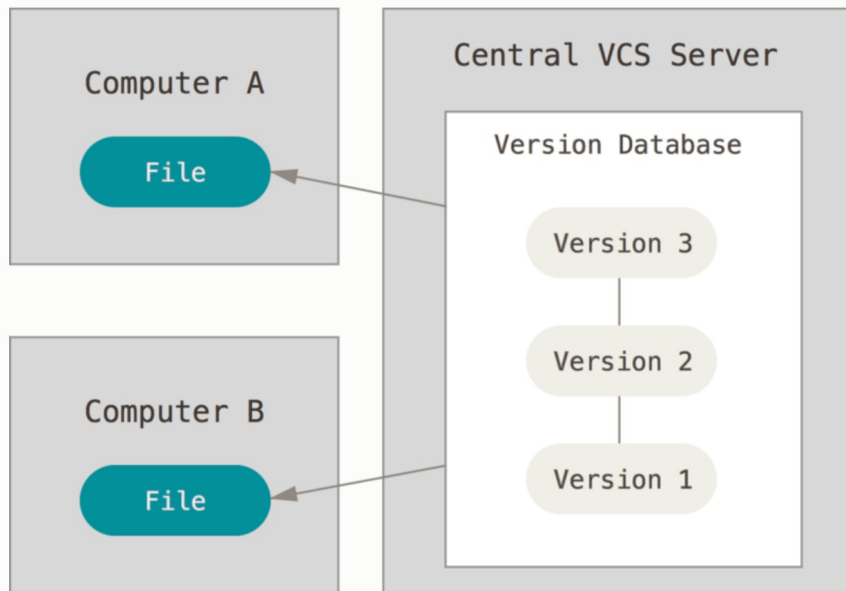
ONE DOES NOT SIMPLY

UNDERSTAND GIT

MemesHappen

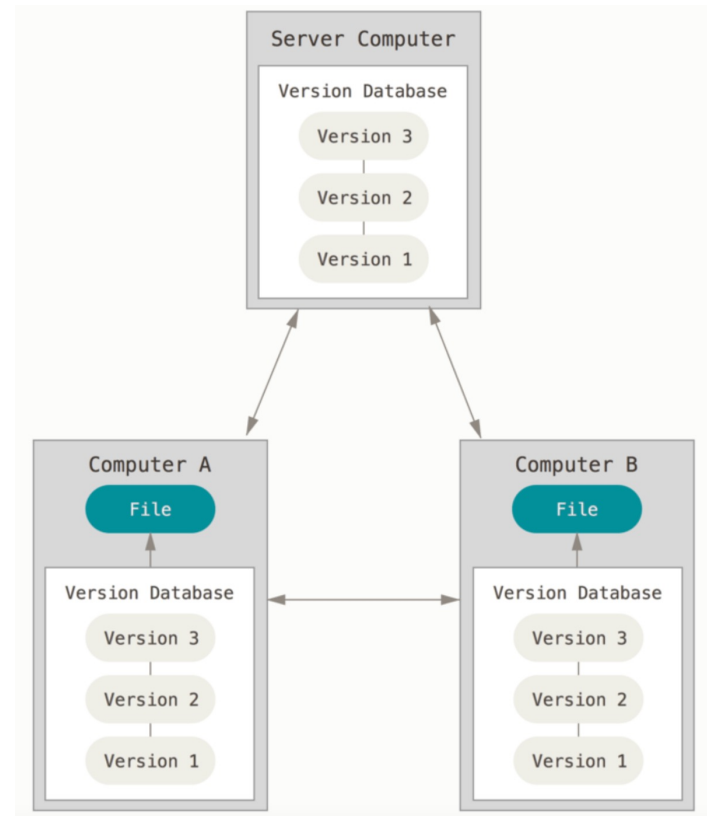
Centralized vs Distributed

Centralized version control



CVS, Subversion, and Perforce

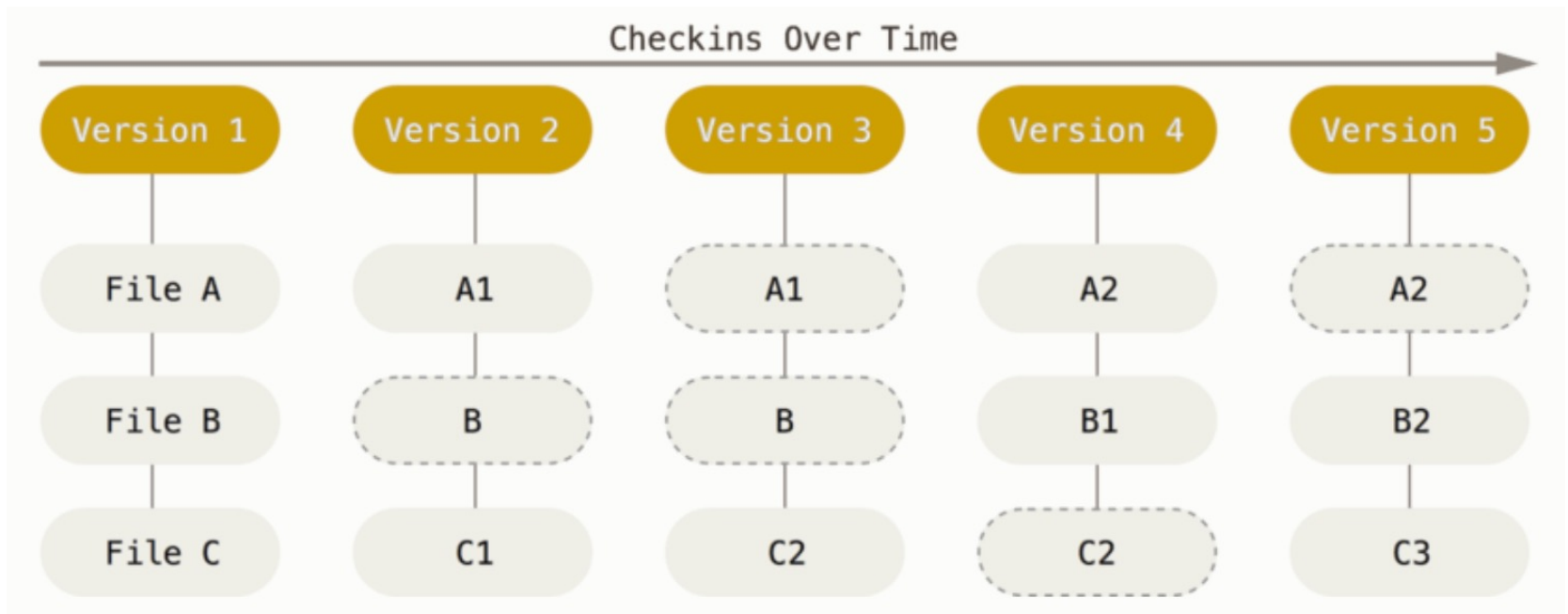
Distributed version control



Git, Mercurial, Bazaar or Darcs

What is Git?

Git thinks about its data more like a **stream of snapshots**.

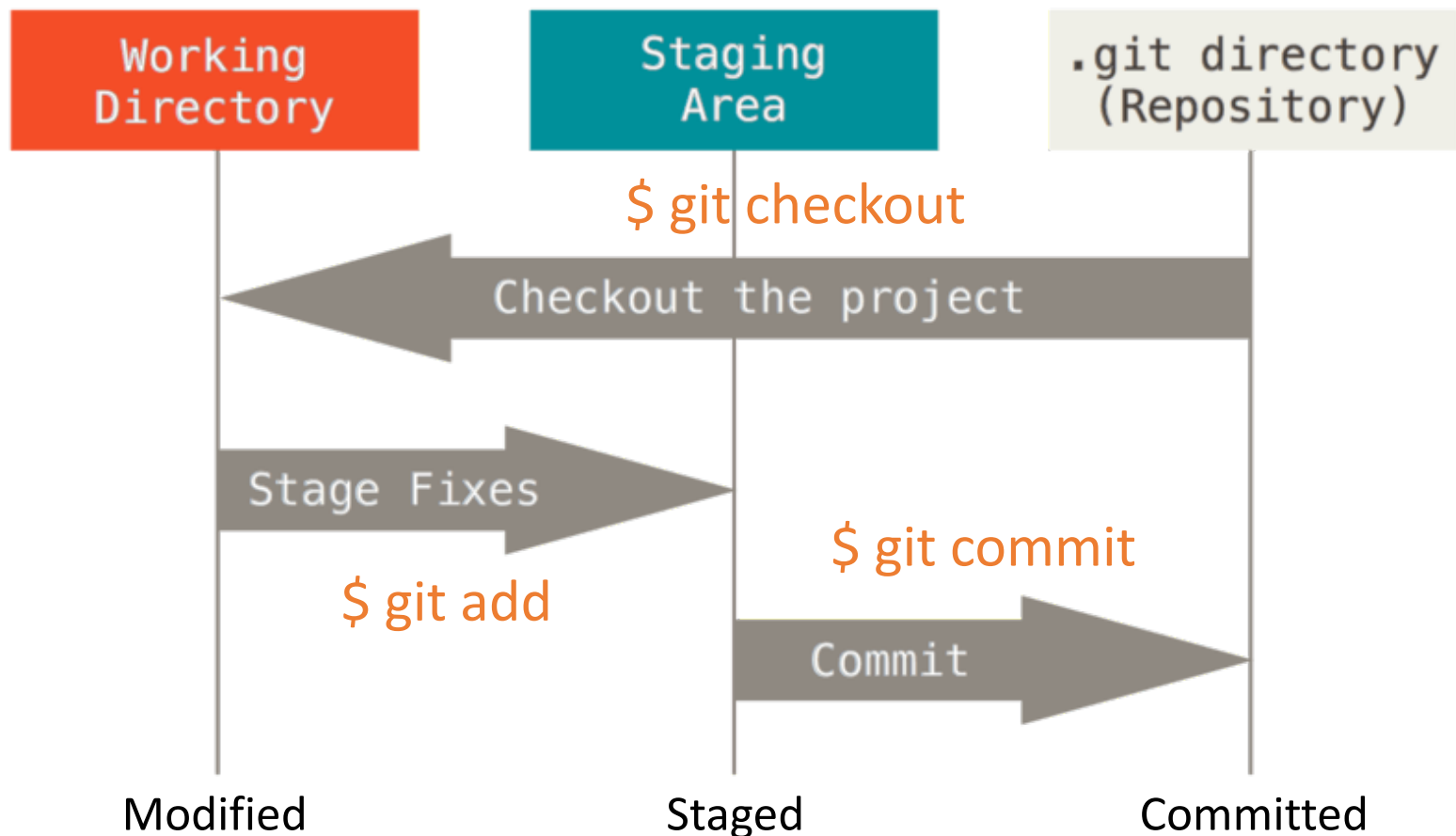


The three sections of Git

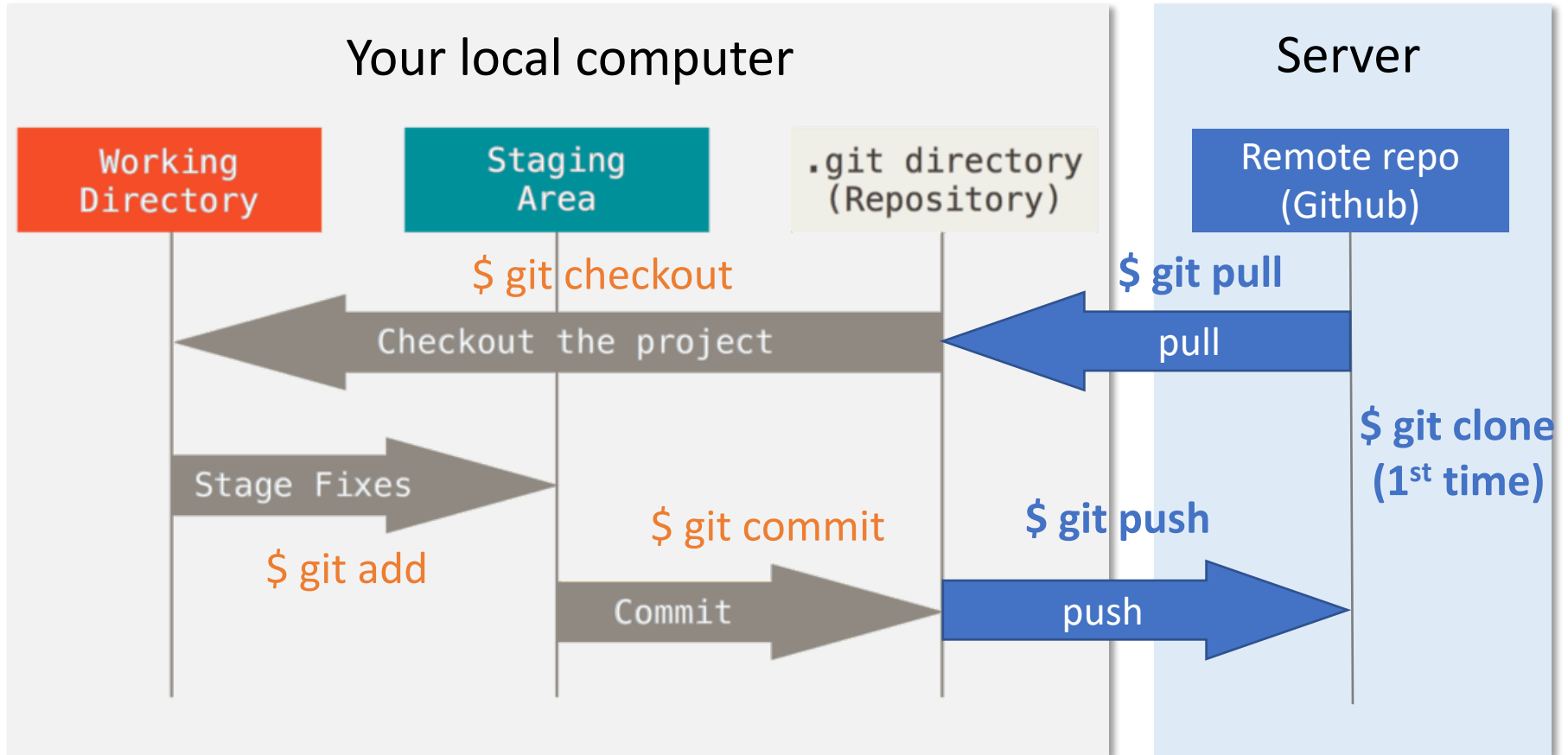
1. Working tree

2. Staging area

3. Git directory (local)



Working with remote repository



5. Write your paper – Git(hub)

- Install git
 - Windows: <https://git-scm.com/download/win>
 - Linux: `$ sudo apt install git-all`
 - macOS: `$ git --version` or `$ brew install git`
- Git interface
 - Command line: Git for windows (<https://gitforwindows.org/>)
 - Graphical: Github Desktop (<https://desktop.github.com/>)
 - **Only use graphical after knowing how to use command line!**
- Apply for a student account on Github
 - <https://education.github.com/students>
 - To have free Github Pro
 - Supply 英文在读证明

Create a new private repository

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner



Repository name



Great repository names are short and memorable. Need inspiration? How about **sturdy-telegram**.

Description (optional)

☐  **Public**
Anyone can see this repository. You choose who can commit.

☒  **Private**
You choose who can see and commit to this repository.

☐ **Initialize this repository with a README**

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** ▼

Add a license: **None** ▼



Create repository

Add your collaborators

The screenshot shows the GitHub interface for a repository named 'example' by user 'Cyan27'. The repository is marked as 'Private'. At the top, there are buttons for 'Unwatch' (1), 'Star' (0), and 'Fork' (0). Below these are navigation tabs: 'Code', 'Issues' (0), 'Pull requests' (0), 'Projects' (0), 'Wiki', 'Insights', and 'Settings' (which is currently selected). On the left side, a sidebar menu lists 'Options', 'Collaborators' (highlighted with an orange bar), 'Branches', 'Webhooks', 'Integrations & services', and 'Deploy keys'. The main content area is titled 'Collaborators' and includes a link 'Push access to the repository'. It contains a message: 'This repository doesn't have any collaborators yet. Use the form below to add a collaborator.' Below this is a search section titled 'Search by username, full name or email address' with a subtext: 'You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.' There is a text input field and an 'Add collaborator' button.

Cyan27 / example Private

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Options

Collaborators

Branches

Webhooks

Integrations & services

Deploy keys

Collaborators Push access to the repository

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

Add collaborator

Clone into your local folder

```
$ git clone https://github.com/yourname/example.git
```

The screenshot shows the GitHub interface for a repository named 'example' by user 'Cyan27'. The repository is private and has 1 star, 0 forks, and 1 commit. The 'Code' tab is selected, showing a file named 'README.md'. A dropdown menu is open from the 'Clone or download' button, displaying the 'Clone with HTTPS' option and the repository URL: `https://github.com/Cyan27/example.git`. Other options in the dropdown include 'Use SSH', 'Open in Desktop', and 'Download ZIP'.

Cyan27 / example Private

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

No description, website, or topics provided. [Add topics](#) [Edit](#)

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

Cyan27 Create README.md

README.md Create README.md

README.md

example

Clone with HTTPS ? Use SSH

Use Git or checkout with SVN using the web URL.

`https://github.com/Cyan27/example.git`

Open in Desktop Download ZIP

Put your paper into the git folder

- Add .gitignore
 - Include a .gitignore file before you mess up everything (<https://github.com/github/gitignore/blob/master/TeX.gitignore>)
- Add your paper's TeX files
- Often check your git repo status with
 - `$ git status`
- Select the files you want to stage
 - `$ git add <filename>` or `$ git add -- all`
- Commit your changes to the files
 - `$ git commit -m "A summarize of your edits"`
- Download updates from Github
 - `$ git pull`
- Fix conflicts if any (manually fix conflicts and commit again)
- Upload to Github
 - `$ git push`

How to Write a Git Commit Message

	COMMENT	DATE
○	CREATED MAIN LOOP & TIMING CONTROL	14 HOURS AGO
○	ENABLED CONFIG FILE PARSING	9 HOURS AGO
○	MISC BUGFIXES	5 HOURS AGO
○	CODE ADDITIONS/EDITS	4 HOURS AGO
○	MORE CODE	4 HOURS AGO
○	HERE HAVE CODE	4 HOURS AGO
○	AAAAAAAAAA	3 HOURS AGO
○	ADKFJSLKDFJSDKLFJ	3 HOURS AGO
○	MY HANDS ARE TYPING WORDS	2 HOURS AGO
○	HAAAAAAAAAANDS	2 HOURS AGO

AS A PROJECT DRAGS ON, MY GIT COMMIT MESSAGES GET LESS AND LESS INFORMATIVE.

Git Commit Message (bad)

```
$ git log
```

e5f4b49 Re-adding ConfigurationPostProcessorTests after its brief removal in r814. @Ignore-ing the testCglibClassesAreLoadedJustInTimeForEnhancement() method as it turns out this was one of the culprits in the recent build breakage. The classloader hacking causes subtle downstream effects, breaking unrelated tests. The test method is still useful, but should only be run on a manual basis to ensure CGLIB is not prematurely classloaded, and should not be run as part of the automated build.

2db0f12 fixed two build-breaking issues: + reverted ClassMetadataReadingVisitor to revision 794 + eliminated ConfigurationPostProcessorTests until further investigation determines why it causes downstream tests to fail (such as the seemingly unrelated ClassPathXmlApplicationContextTests)

147709f Tweaks to package-info.java files

22b25e0 Consolidated Util and MutableAnnotationUtils classes into existing AsmUtils

7f96f57 polishing

Git Commit Message (good)

```
$ git log
```

5ba3db6 Fix failing CompositePropertySourceTests

84564a0 Rework @PropertySource early parsing logic

e142fd1 Add tests for ImportSelector meta-data

887815f Update docbook dependency and generate epub

ac8326d Polish mockito usage

The 7 rules of a great Git commit message

<https://chris.beams.io/posts/git-commit/>

Join the USSLAB group

Send Wenjun your Github username!

The screenshot shows the GitHub profile of the Ubiquitous System Security Laboratory (USSLAB) at Zhejiang University. The profile header includes the organization's name, location (Hangzhou, China), and website (http://usslab.org). Below the header, there are tabs for Repositories (3), People (8), Teams (0), Projects (0), and Settings. A search bar and filters for repository type and language are present. The main content area lists three repositories: DolphinAttack, CAN_OMEGA, and CAN_OMEGA_Tools. Each repository entry shows its description, tags, star/fork counts, and update date. The right sidebar displays 'Top languages' (Java) and 'People' (8 members) with their avatars.

Ubiquitous System Security Laboratory
Zhejiang University
Hangzhou, China <http://usslab.org>

Repositories 3 | People 8 | Teams 0 | Projects 0 | Settings

Search repositories... Type: All Language: All Customize pinned repositories [New](#)

DolphinAttack
Inaudible Voice Commands
security speech-recognition ultrasound inaudible-voice-commands
★ 14 🍴 5 Updated on 12 Mar

CAN_OMEGA
Forked from zjlywjh001/CAN_OMEGA
Ultimate CAN Bus tool for Car hacking. Full Featured hardware & software.
🍴 6 📄 MIT Updated on 13 Feb 2017

CAN_OMEGA_Tools
Forked from zjlywjh001/CAN_OMEGA_Tools
A Powerful cross-platform GUI tool for CAN Omega Hardware.
Java 🍴 2 📄 MIT Updated on 13 Feb 2017

Top languages
● Java

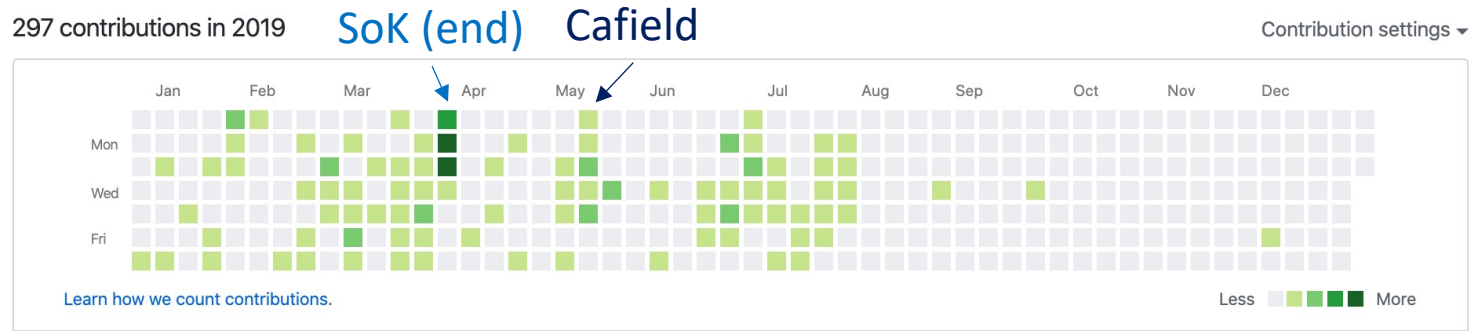
People 8 >
[Avatars of 8 people]
[Invite someone](#)

Advice on research habits

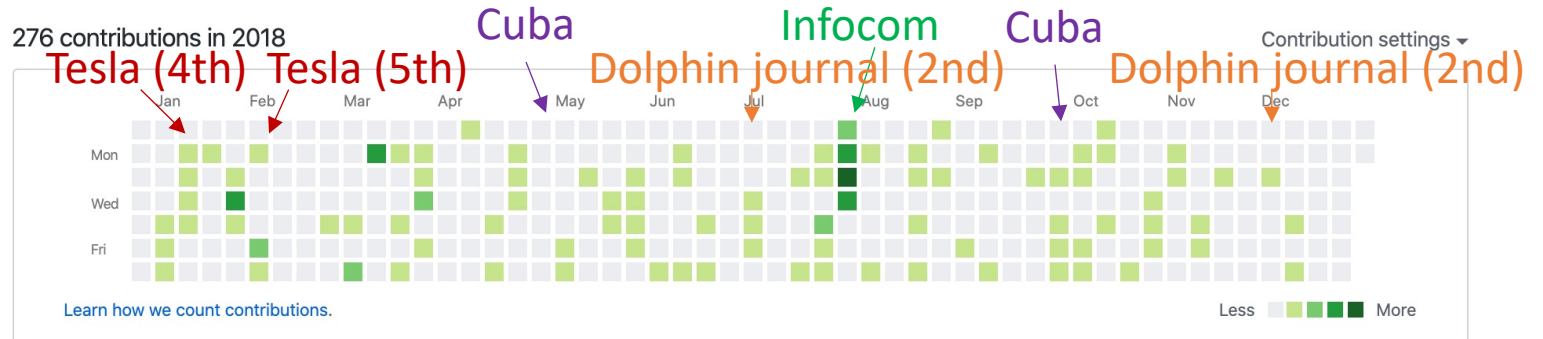
我的博士收获与心得

- 多读、多做、多写、多改、多投（熟能生巧、分散风险）
- 多想（多问为什么）
- 高效合作需要好的方式和方法
- 细节很重要，但要顾全大局，做好时间、精力把控
- 实现比idea更重要，完成比完美更重要
- 持续产出需要保持连贯性投入

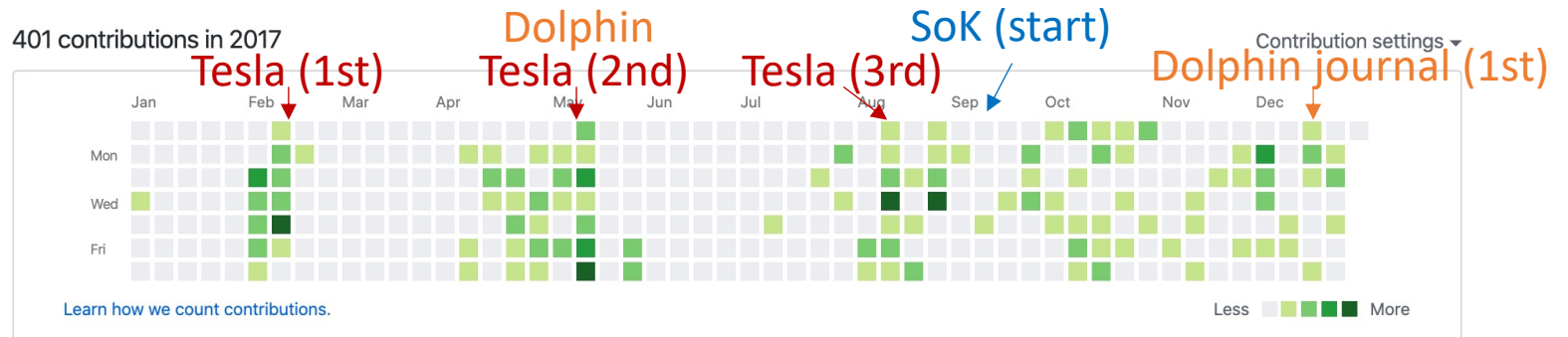
2019



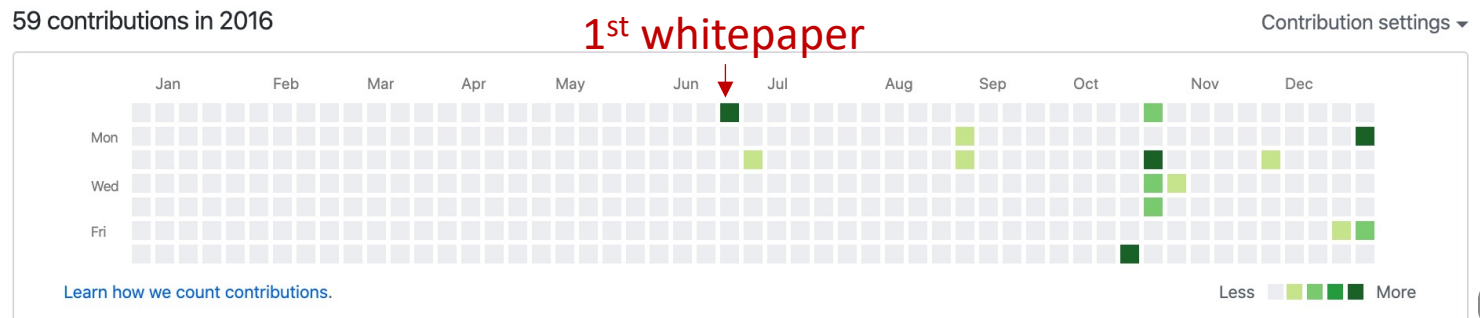
2018



2017



2016



Questions or Suggestions?

