

# Minute Madness

Jon Crowcroft

9/3/26

2/26/26

2/26/26

The thumbnails represent the following slides:

- 1. Minute Madness
- 2. One Side, One Minute, One Idea
- 3. Amuse Bouche
- 4. One Last Thing (First) simple
- 5. One Last Thing (First) ocean boiling
- 6. One Last Thing (Second) relatable
- 7. One Last Thing (Second) Overlay abstract...
- 8. One Last Thing (Third) humour...
- 9. One Last Thing (Third) too obscure
- 10. Peka Kuche - a half way house
- 11. The Whole Kaboodle
- 12. Aspects

# One Slide, One Minute, One Idea

- KISS
  - One Graph
    - or
  - Equation
    - or
  - Infographic
- Do Keep it Simple, Do not abstract too far, Do not boil the ocean...

# Amuse Bouche

- How to do a 1 Minute talk on how to do 1 Minute talk in 1 minute?

# One Last Thing (First) simple

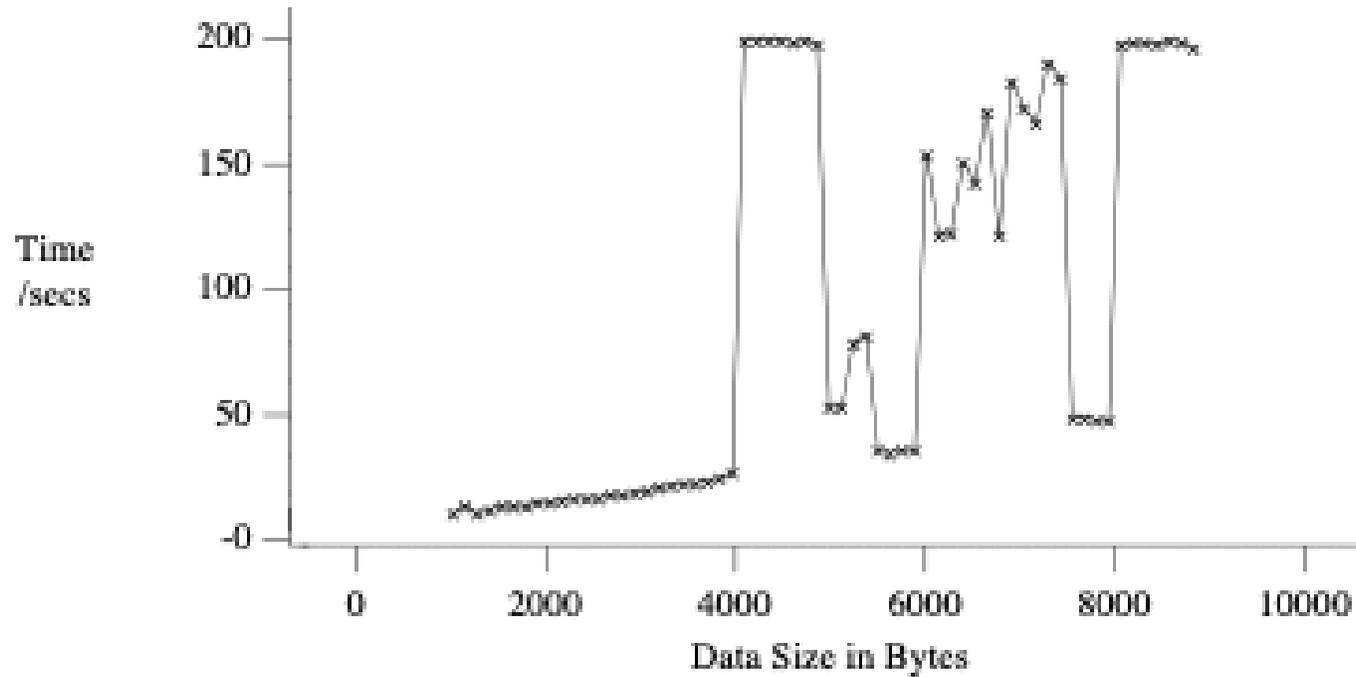


Figure 1. Time taken for 1000 calls for various sizes of data

# One Last Thing (First) ocean boiling

	System	Commodity hardware	Unmodified protocols	OS kernel	apps.	Coord. free	Flow deadlines	Bounded latency	Implemented
Deployable	Pause frames	✓	✓	✓	✓	✓	✗	✗	✓ <sup>‡</sup>
	ECN	✓ <sup>*</sup> , ECN	✓	✓	✓	✓	✗	✗	✓ <sup>‡</sup>
	DCTCP [1]	✓ <sup>*</sup> , ECN	✓ <sup>*</sup>	✗	✓	✓	✗	✗	✓ <sup>‡</sup>
	Fastpass [29]	✓	✓	✓, module	✓	✗	✗	✗	✓ <sup>‡</sup>
	EyeQ [22]	✓ <sup>*</sup> , ECN	✓	✗	✓	✗	✗	✗	✓ <sup>‡</sup>
	QJUMP	✓	✓	✓, module	✓	✓	✓	✓	✓ <sup>‡</sup>
Not deployable	D <sup>2</sup> -TCP [33]	✓ <sup>*</sup> , ECN	✓ <sup>*</sup>	✗	✗	✗ <sup>*</sup>	✓	✗	✓
	HULL [2]	✗	✓ <sup>*</sup>	✗	✓	✓	✗	✗	✓ <sup>*</sup>
	D <sup>3</sup> [35]	✗	✗	✗	✗	✓	✓	✗	✗ <sup>*</sup> , softw.
	PDQ [17]	✗	✗	✗	✗	✗	✓	✗	✗
	pFabric [3]	✗	✗	✗	✓	✓	✓ <sup>*</sup>	✗	✗
	DeTail [37]	✗	✓	✓	✗	✗ <sup>*</sup>	✗	✗	✗ <sup>*</sup> , softw.
	Silo [21]	✓	✓	✗	✓ <sup>*</sup>	✗ <sup>*</sup>	✓ <sup>*</sup> , SLAs	✗	✓
TDMA Eth. [34]	✓ <sup>*</sup>	✓ <sup>*</sup>	✗	✓ <sup>*</sup>	✗	✗	✓	✓	

**Table 2:** Comparison of related systems. <sup>\*</sup>with caveats, see text; <sup>‡</sup>implementation publicly available.

One Last Thing (Second)relatable

$$BW = \frac{MSS}{RTT \sqrt{\frac{2bp}{3}}}$$

# One Last Thing (Second) Overlay abstracted...

$$\square A^0 = \mu_0 j^0,$$

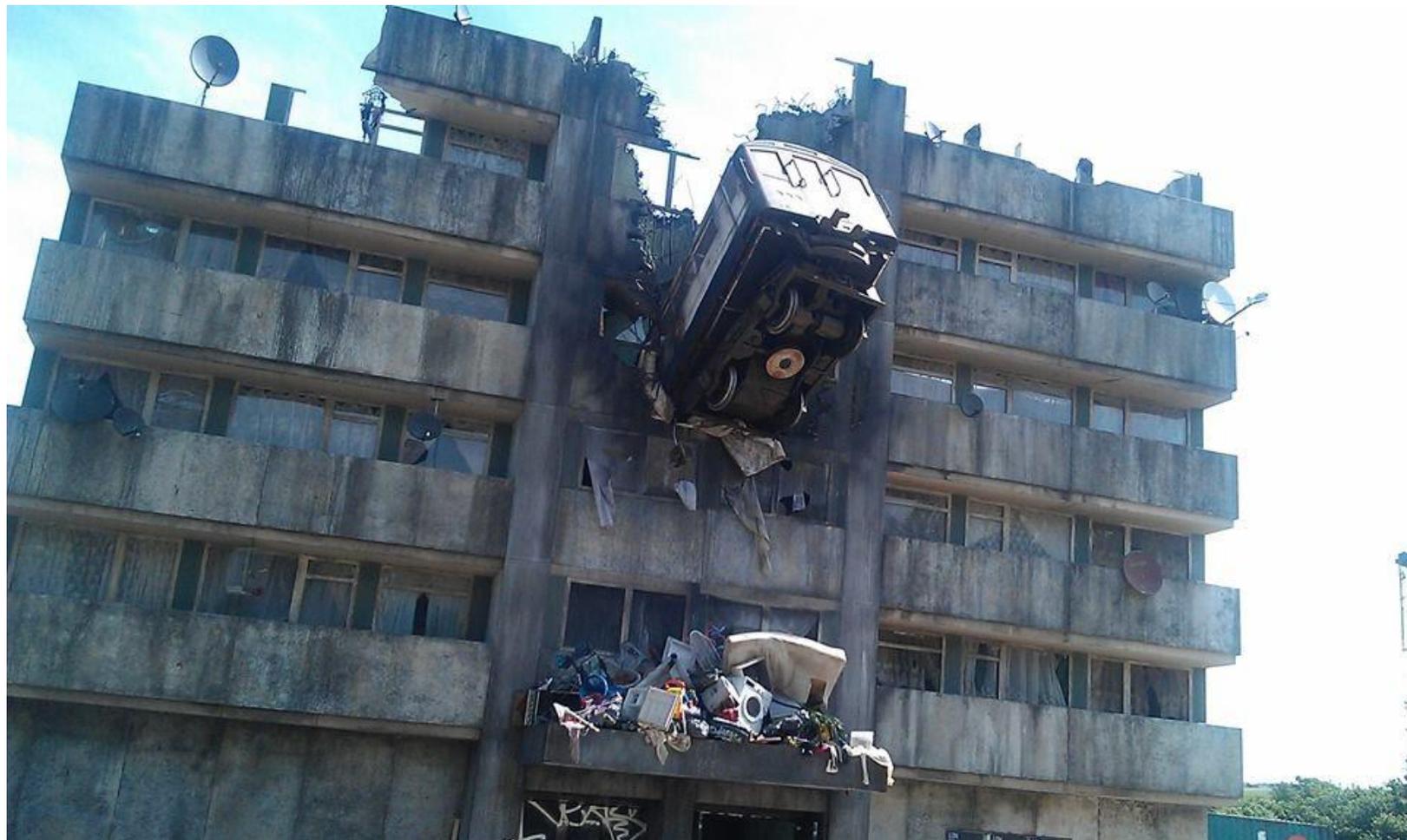
Maxwell equation for 4-potential

# One Last Thing (Third) humour...



*"On the Internet, nobody knows you're a dog."*

# One Last Thing (Third) too obscure



# Pekka Kucha – a half way house

- 7 slides in 7 minutes

What I just did 😊

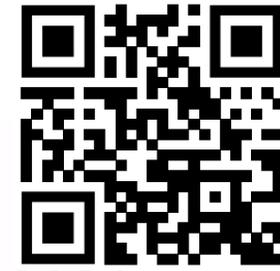
# The Whole Kaboodle

- 20 min talk with 5 min Q&A
  - First 1 slide minute is the minute madness
  - Next 7 slides are pekka kucha
  - Next 1 slide is a deep dive into one single aspect
- That's 2 slides too many 😊

# Aspects

- Enthusiasm
  - Passion is over-stating it – we are not Mills&Boone
- Animation
  - Literally as well as metaphorically
- Openness
  - Engage with audience – as far as possible

# Introduction to “One Minute Madness aka: how to pitch your research



Prof. Anil Madhavapeddy (Energy & Environment Group),  
with Dr. Sadiq Jaffer (Energy & Environment Group)  
and Onkar Gulati (Energy & Environment Group)

*for ACS and CPGS students, Lent Term 2025  
Fri March 7th 2025*



# Introduction to “One Minute Madness” aka: how to pitch your research



Prof. Anil Madhavapeddy (Energy & Environment Group),  
with Dr. Sadiq Jaffer (Energy & Environment Group)  
and Onkar Gulati (Energy & Environment Group)

*for ACS and CPGS students, Lent Term 2025  
Fri March 7th 2025*



llama



# Elevator Pitch

## Goals

- Make listeners **aware** of the presented topic.
- Leave them with a **followup** if interested.

## Non-goals

- Describing every **detail** of your idea.
- Try to appeal to **everyone** about your idea.

# Lifecycle of a pitch

**None of your ideas spring out fully formed.**

For a successful pitch, you need to think through the *process* of getting to your idea.



# Lifecycle of a pitch

**None of your ideas spring out fully formed.**

For a successful pitch, you need to think through the *process* of getting to your idea.



- Important not to read too much from polished papers and presentations.
- Many of the important advances come from the elimination process.

# Lifecycle of a pitch

**None of your ideas spring out fully formed.**

For a successful pitch, you need to think through the *process* of getting to your idea.



- Compare **submitted** research papers vs the **published** papers. Take advantage of being in a university with academics that can give you access to unpublished material.
- Practice with your peers and discuss the process by which they came to their ideas. *Nobody* gets it perfect the first time.



“How to pitch your research”

- You start with an **intuition** of what interests you and seems important.
- A vague **idea** of how to fix the world.
- Convince an overworked professor that your idea is **worthwhile**.
- Submitting an MPhil research proposal was actually your “first pitch”.  
Congratulations!



“How to pitch your research”

<b>Working Title</b>	Succinctly capture the idea into a few words, not overly technical if possible.
<b>Research Thesis</b>	One sentence at this stage. Very hard to get right, will have many revisions.
<b>Key Papers</b>	Identify 2-4 key research papers in the field. Nominate the “key” one if appropriate. Digest these papers and read some related work.
<b>Core Idea</b>	Write down the core idea in a few paragraphs, making references to the above.
<b>“What’s new” “So what”</b>	The key metrics for research evaluation are to ask what the novelty is (“contribution”), and why it matters (“impact”).



“How to pitch your research”

<b>Working Title</b>	Succinctly capture the idea into a few words, not overly technical if possible.
<b>Research</b>	et right, will have many revisions.
<b>Key</b>	ld. Nominate the papers and read me related work.
<b>Co</b>	ragraphs, making ces to the above.
<b>“What’s new” “So what”</b>	The key metrics for research evaluation are to ask what the novelty is (“contribution”), and why it matters (“impact”).

Iterate again and again!  
 Rejection, criticism, skepticism are to be expected while you develop the pitch.



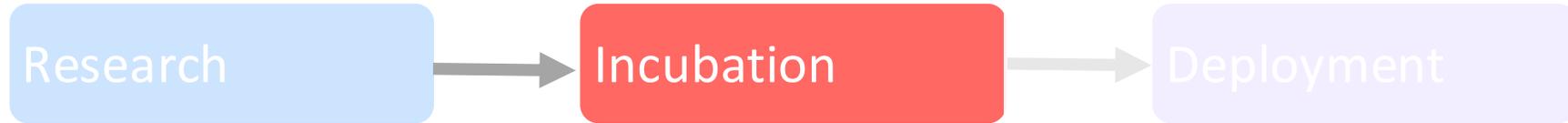
Example: [Unikernels](#)

<b>Working Title</b>	Unikernels, Library Operating Systems for the Cloud
<b>Research Thesis</b>	Unikernels are single-purpose appliances that are compile-time specialised into standalone kernels, and sealed against modification when deployed to a cloud platform. In return they offer significant reduction in image sizes, improved efficiency and security, and should reduce operational costs.
<b>Key Papers</b>	<p>“Self Paging in the Nemesis Operating System” - Hand <i>et al</i></p> <p>“Exokernel: An Operating System Architecture for Application-Level Resource Management” - Engler <i>et al</i></p> <p>“A Network Protocol Stack in Standard ML” - Biagiono <i>et al</i></p>
<b>Core Idea</b>	MirageOS compiles OCaml code into unikernels that run on commodity clouds and offer an order of magnitude reduction in code size without significant performance penalty. The architecture combines static type-safety with a single address-space layout that can be made immutable via a hypervisor extension.
<b>“What’s new” “So what”</b>	Mirage contributes a suite of type-safe protocol libraries, and our results demonstrate that the hypervisor is a platform that overcomes the hardware compatibility issues that have made past library operating systems impractical to deploy in the real-world.



“How to implement your research idea”

<b>Idea</b>	Frame idea as a hypothesis and identify relevant predictions from pockets of academic research that are relevant.
-------------	---



“How to implement your research idea”

<b>Idea</b>	Frame idea as a hypothesis and identify relevant predictions from pockets of academic research that are relevant.
<b>Data</b>	How can the hypothesis be explored? What data do you need to support the question? Qualitative or quantitative, sampling and distribution characteristics, ethical obstacles.



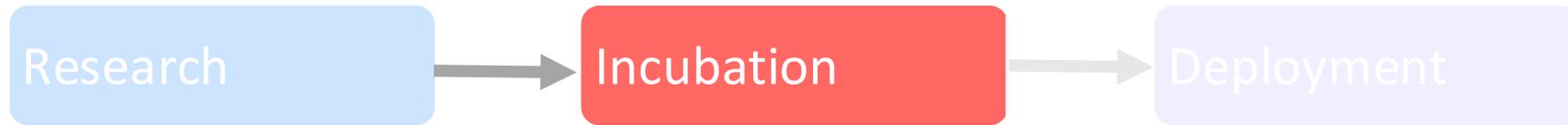
“How to implement your research idea”

<b>Idea</b>	Frame idea as a hypothesis and identify relevant predictions from pockets of academic research that are relevant.
<b>Data</b>	How can the hypothesis be explored? What data do you need to support the question? Qualitative or quantitative, sampling and distribution characteristics, ethical obstacles.
<b>Tools</b>	Idea and data need to be combined, often with tools. Increasing number of off-the-shelf systems, but important to understand their parameters and limitations.



Example: [Unikernels](#)

<b>Idea</b>	Build a programming framework in a functional language (OCaml) that rebuilds operating system functionality in a modular, composable style.
<b>Data</b>	Evaluation requires comparison of the specialised applications (e.g. Xen) vs conventional deployments on a normal OS. Quantitative performance data, and more qualitative information such as complexity.
<b>Tools</b>	Required building up a library ecosystem around the OCaml language to support all the libraries and their composition; e.g. the <i>opam</i> package manager. Without this, hard to reason about realistic unikernels.



Choose Tools Carefully

- The tools you choose to build on can greatly affect the research direction.
- Assess the **technical** soundness, the **community** around it, and the **rate of change** of the platform.
  - Is it open-source and easily installable?
  - Is there decent documentation available?
  - Are there other published papers using it reproducibly?
- When you present your work, these considerations gives an instant first impression to the listener.



“How to popularise your research artefacts”

<b>Artefact</b>	What <i>is</i> your research artefact? Is it a piece of software, an application, an algorithm, some mathematics?
<b>Network Effect</b>	To deploy it, is there some sort of reason more users will try it?
<b>Extensible</b>	Is the code and data open source and open access? Can other users reproduce your work?
<b>Milestones</b>	What is your rate of progress? Are there significant points where input will help your research?



Example: [Unikernels](#)

<b>Artefact</b>	MirageOS ( <a href="#">mirage.io</a> ). Consists of a CLI driver, many OCaml libraries, and documentation/tests.
<b>Network Effect</b>	Libraries published online, and useful for conventional use (e.g. a webserver) instead of <i>just</i> unikernels.
<b>Extensible</b>	All source code on GitHub and open-source and (sort of) documented. External contributions encouraged via regular community meetings.
<b>Milestones</b>	First talk on Mirage was self-hosting on Mirage itself, using a web server. Then regular releases driven by papers, and later incubation in the Linux Foundation.

# Distilling a pitch

- Distilling the elevator pitch from these parts of the lifecycle into **one** slide is tough but incorporates the same elements!
- Elevator pitches vary enormously. We have picked a 1 minute madness slot, but do not just compress. Hook your audience in if they want to know more!

Know your audience

**Define** the problem

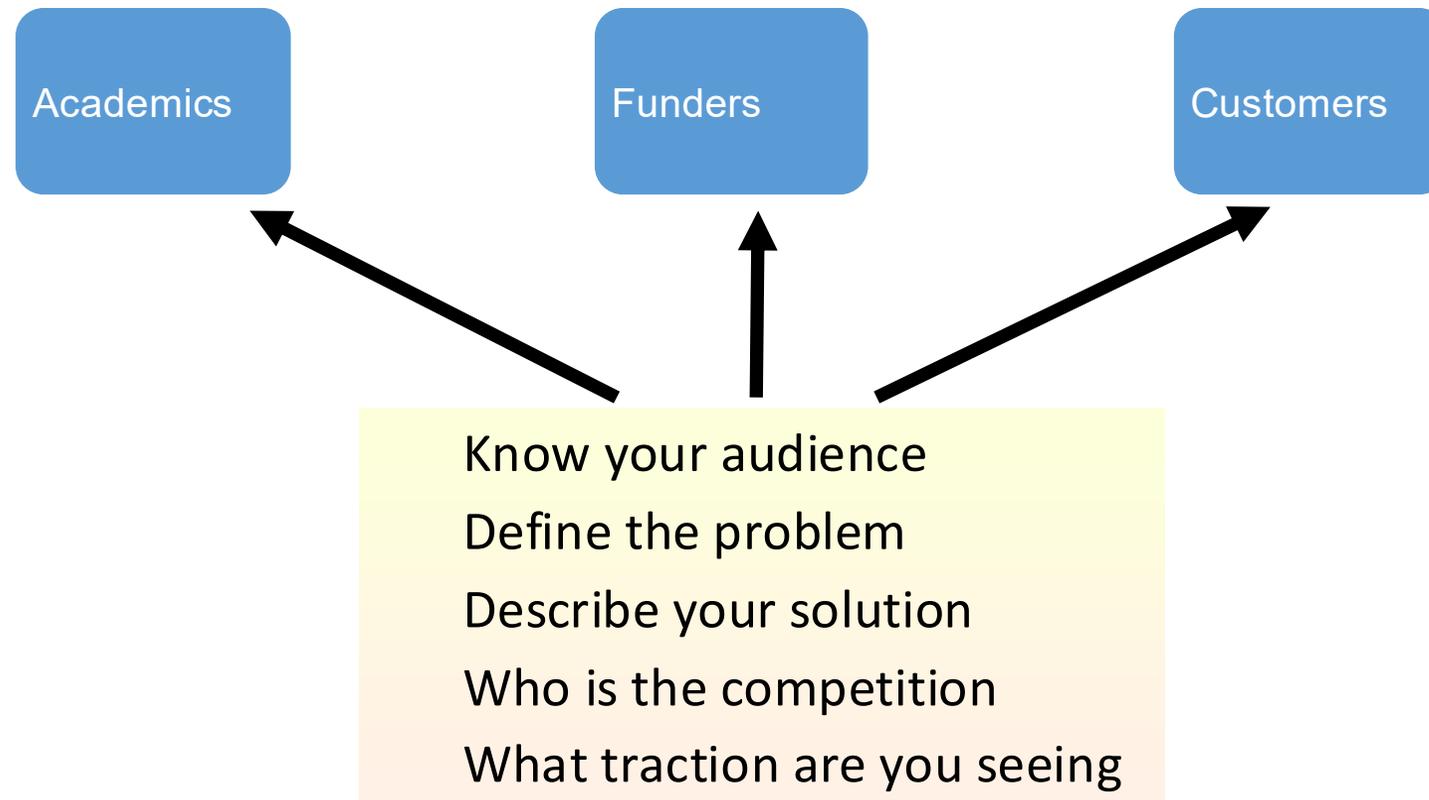
**Describe** your solution

**Who** is the competition

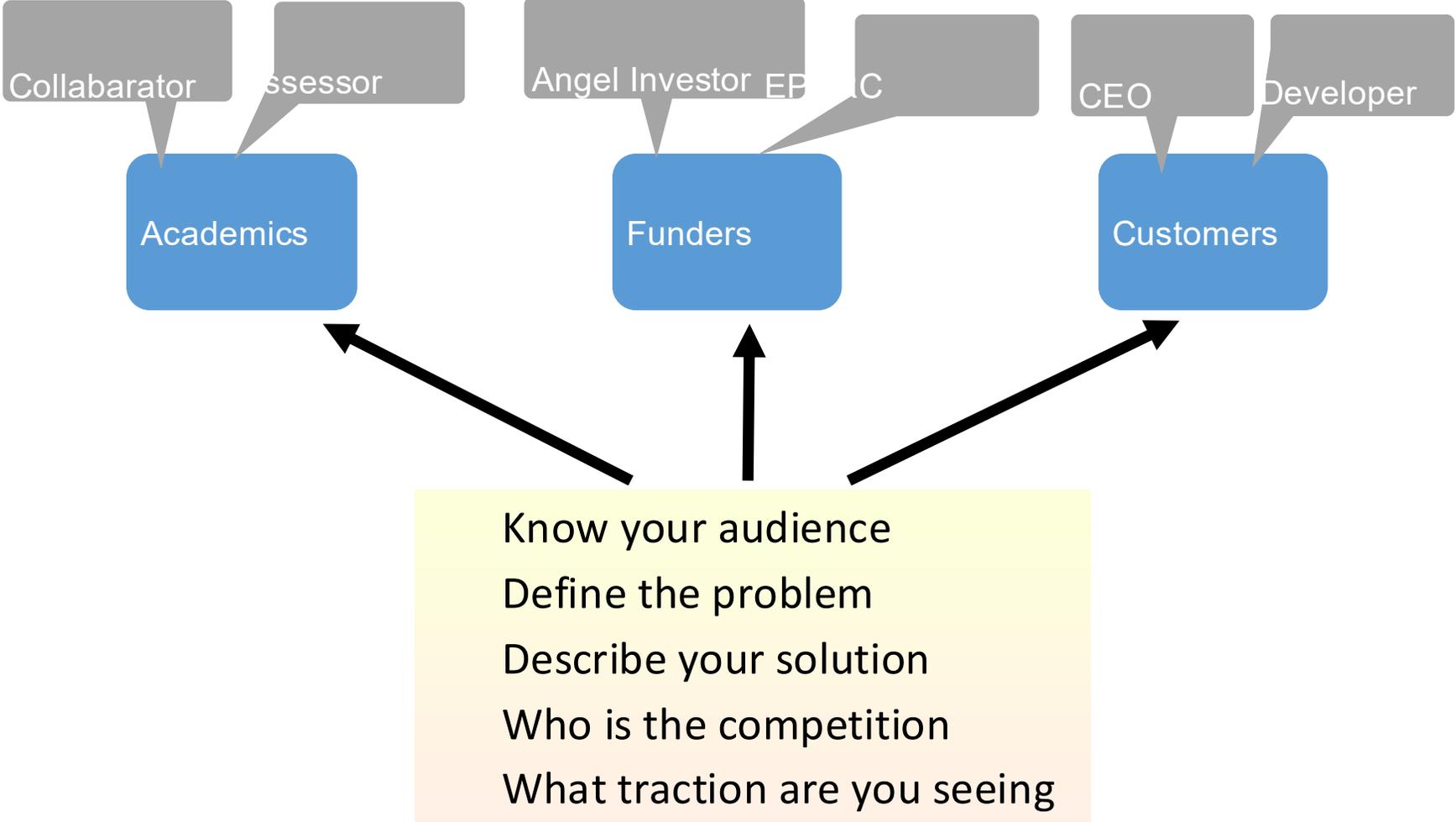
**What** traction are you seeing, milestones hit

*Maybe: team, financials (more for a startup)*

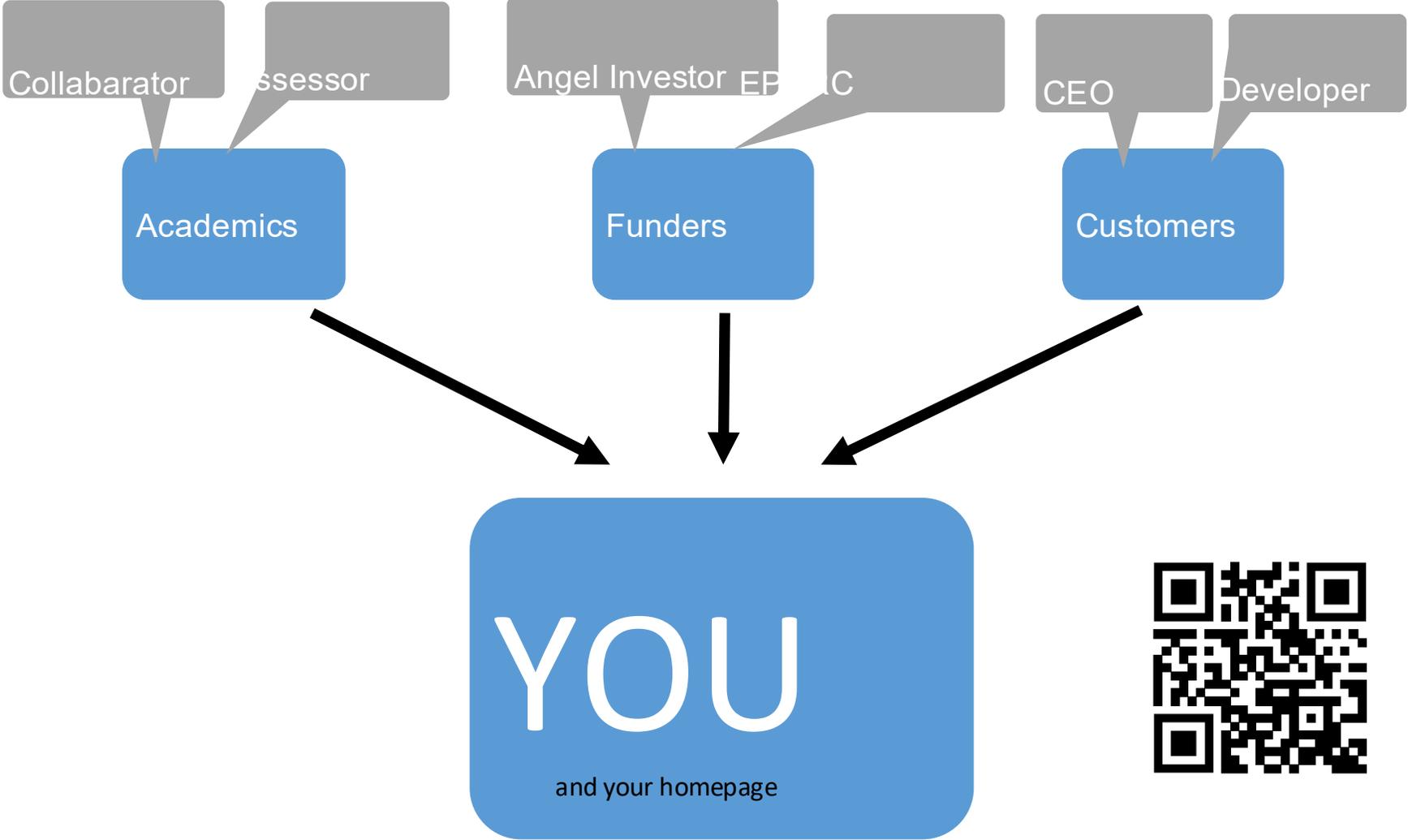
# Distilling a pitch



# Distilling a pitch



# Distilling a pitch



# Distilling a pitch

<b>Collaborator</b>	“Great research paper being made, but I need help with the theoretical aspects of the work.”
<b>Assessor</b>	“Student has understood the overall research methodology, so let’s look further into the experiments”
<b>Angel Investor</b>	“This research is seeing rapid traction and developing fast, but needs some investment in marketing”
<b>EPSRC</b>	“The interview panel has validated the research excellence and pathways to impact of this fellowship”
<b>CEO</b>	“This product could save my developers 20% of their engineering time currently spent on testing!”
<b>Developer</b>	“If I add this framework to my app, it would let me ship this feature a month early”

# Presentation Style

- **Enthusiasm:** Is your pitch even worth listening to?
- **Clarity:** Practise the first sentence and the last one. This way you know your entrance and exit crisply.
- **Eye contact:** check if your audience is lost. Don't fixate.
- **Practise:** really does make perfect for short talks.

# Peer Evaluation

## **Listener:**

- How much time did you spend reading slide *vs* listening?
- Were you confused by any of the material?
- Did you find a followup in the material?
- Was the speaker interactive, or just reciting?

## **Speaker:**

- How was your entrance and exit?
- Did you observe any cues from the audience?
- Was there a good mix between the slide material and the spoken word?

# Peer Evaluation

## Listener:

- How much time did you spend reading slide vs listening?
- Were you able to follow the speaker's argument?
- Did you find the speaker's research convincing?
- Was the speaker's presentation clear and engaging?

## Speaker:

- How well did you manage your time?
- Did you use the slides effectively?
- Was there a good mix between the slide material and the spoken word?

It's ok to experiment here!

Research is so wide ranging,  
treat all of these as optional  
guidelines to suit your needs

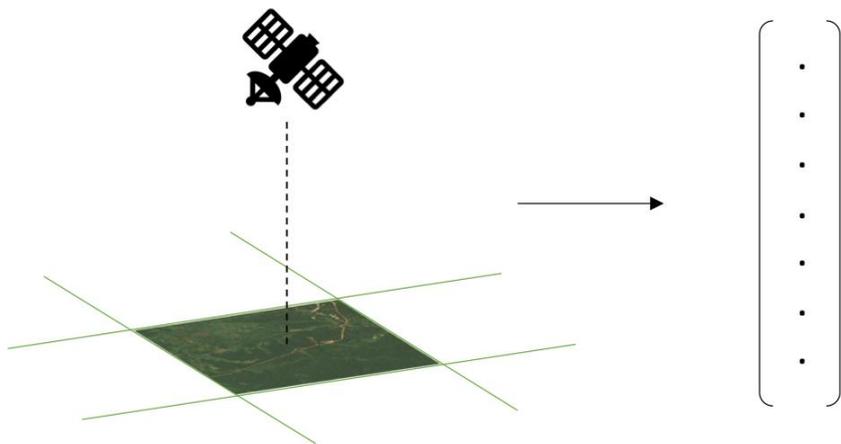
# Peer Evaluation

- Dr. Sadiq Jaffer from the Energy and Evaluation Group
- Onkar Gulati, a PhD student and also last year's winner!
- Developing their pitches to various audiences.
- Let's evaluate it together.

# Label-Efficient Learning of SDG Indicators from Space

Supervisors: Prof. Anil Madhavapeddy, Dr. Sadiq Jaffer

Easy goal: save the world



*Is all this really visible from space?!*

Looking to find out:

- What is really visible from space? What is just correlated with something that is?
- How effective are government interventions?
- Can geospatial embeddings capture progress towards these indicators?



Onkar Gulati

[og309@cam.ac.uk](mailto:og309@cam.ac.uk)  
[linkedin.com/in/ogulati](https://www.linkedin.com/in/ogulati)