From Research to Impact

First-hand experience — from a paper to real-world impact

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ABOUT ME

Who am I?



Background

Engineer → researcher → PhD → scientist → assistant professor → scientist.
(US, Netherlands, Singapore, UK, Sweden)



Research focus

Software and AI security



Track record

Patents, $1M in research funding, a startup $500K, and open-source tools.

AGENDA

What we'll cover

1 Concepts & frameworks

- What “impact” really means
- Deep tech vs. conventional tech
- The three roles of a researcher
- Routes: IP, tech transfer, commercialization, open source

2 My personal experience

- How one idea actually traveled
- Publishing, patenting, tech transfer, and commercialization
- A close look at the hand-off
- Lessons for your own work

A note on Part 2: this is my personal experience — one path among many. Not every idea will (or should) follow it.



What does “impact” mean to you?

SOME ANSWERS WE HEAR

There's no single right answer



A highly-cited paper



A product people use



A patent or spin-off



Changing policy or practice

DEFINITIONS

Two kinds of impact

Both matter — but they are earned, and measured, in very different ways.



Academic impact

Advancing knowledge

- Papers, citations, conference talks
- New methods and theories
- Recognition in your field
- Builds the foundation others use



Real-world impact

Changing what people do

- Products, tools, and services people use
- Adoption by industry or government
- Open-source software others build on
- Success looks like real-world use

WHAT KIND OF INNOVATION?

Deep tech vs. conventional tech

Not all “tech” is the same. This talk is about the kind rooted in hard science — where the research itself is the hard part.



Deep tech

The science is the breakthrough

- Built on scientific or engineering breakthroughs
- Requires deep, specialized expertise
- Years of R&D and high technical risk
- Hard to copy → a durable advantage

e.g. new security methods, novel algorithms, robotics, biotech



Conventional tech

Digitalizing & automating workflows

- Automates existing, well-known workflows
- Built on established technology
- Faster to build and ship
- Competes on execution and speed

e.g. apps, dashboards, integrations, SaaS workflows

MINDSETS

Three roles, one mission

Taking an idea to impact means switching hats. Few people are great at all three — but you must understand each.

Scientist

"Is it true?"

- Asks the right questions
- Rigor, evidence, novelty
- Publishes and validates

Engineer

"Does it work?"

- Builds robust prototypes
- Handles edge cases & scale
- Turns theory into a tool

Entrepreneur

"Who needs it?"

- Finds the real use case
- Funding, users, market
- Carries it to adoption

KNOW YOUR OPTIONS

Tech transfer vs. commercialization

Two very different routes from prototype to product. Choosing the right one early saves years.

Criteria	Tech transfer	Commercialization
Up-front funding	Often grant-backed	You raise it
Customer	Found later	Identified first
Use case	Can be open-ended	Must be concrete
Dedicated team from inventors	Not required	Essential

Rule of thumb: no committed team and no clear customer? You are doing tech transfer, not a startup.

THE FASTEST ROAD

Open source: impact you can start today

You don't need a patent or a company to have impact. Contributing to tools people already use puts your work in their hands now.

- **Add features** New capabilities others adopt immediately
- **Review code** Improve quality, learn the codebase
- **Add reporting & logging** Make tools usable in the real world
- **Reach a global user base** No sales cycle, no approval needed



Lowest barrier, fastest feedback

A single merged pull request can reach more users than a paper reaches readers.

SET EXPECTATIONS

The path is never a straight line

THE MYTH



"Good research speaks for itself and goes straight to the world."

THE REALITY



Every project bends through rejections, pivots, delays, and parallel tracks running for years.

PART 2

How this played out in my own work

One idea, several years, and a lot of overlapping effort.

We have research idea
No plans for commeralization,
tech transfer, etc..



preparing a paper

High-Quality Manuscript

Trial 1

.....

Trial 2

Trial 3

Submission journey (2 yr)

Patenting journey (3 yrs)

PATENTED

$500k

Commeralization journey (2 yrs)

FITSTACK
CODE FITNESS TO SLIM YOUR STACK

Development

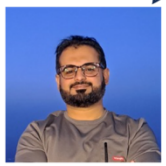
Research Prototype

Tech Transfer journey (3 yrs)

Mature Product

Invitation to deliver a training

Accelerate



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$1 Million

RESILIENCE

Rejection is a stage, not a verdict

That paper was turned down twice before it was accepted. This is normal at top venues — build it into your plan.



Every "no" sharpened the work. Persistence — not luck — got it published.

ZOOMING IN

Inside the longest journey: tech transfer

Handing a prototype to a company is a staged hand-off — about three years, adding people and hardening at each step.



Prototype

the starting point

Research proof of concept



Assessment

1–2 engineers

Can a stranger even run it?



Development

4–5 engineers

Fix what breaks; harden for production



Mature product

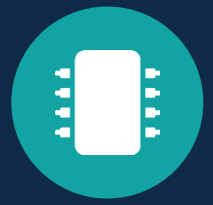
the goal

Reliable, supportable, shippable

Assessment is the make-or-break gate: if a stranger can't run it, the transfer stops here.

ANOTHER ROAD

The entrepreneurship path



Technical

Build & maintain the real product



Hiring

Find people who fill your gaps



Financial

Funding, runway, pricing



Marketing

Reach the people who need it



Legal

IP, contracts, compliance

Most researchers underestimate four of these five. Know which ones you will need help with.

TAKE AWAY

What this means for you

Five things to carry into your own research career.

ADVICE

A few lessons I've learned

Talk to users early

Find who needs your idea before you finish building it.

Embrace risk

Real impact lives in uncertain bets — playing it safe rarely changes anything.

Expect rejection

Plan for revise-and-resubmit; each round makes the work stronger.

Be patient

Useful things take years. Start now and keep several tracks moving.

Pick the right path

Open source, tech transfer, or startup — they demand different things.

You don't have to do it all

No one runs every path — choose what fits you

Wear all three hats

Learn enough scientist, engineer, and entrepreneur to know your gaps.

CONCLUSION

There is no straight path — and that's fine

> *Impact isn't one big launch. It's many slow, overlapping efforts — and the patience to keep them moving.*

Start where you are: open source today, a paper this year, a product this decade.

Thank you · Questions welcome