IMPOSTER SYNDROME & WHAT RESEARCHERS NEED TO KNOW

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https://youtu.be/JqFKv9Rg0k8
To share my personal experiences in my decades-long journal overcoming imposter syndrome

The sooner you know about it, the sooner you become a better researcher
“News anchors’ jobs are easy”
My ultimate goal for you –

Ability to think and speak while being questioned/criticized
“Don’t act differently when you’re around important people.”

-- George Clooney’s advice to a young actor

Hmm... but being yourself is easier said than done
Presentation at Stanford

I'M FULLY CONFIDENT

Presentation at a R2 university

SIT BACK AND RELAX

I GOT THIS
WOMEN IN CYBERSECURITY
Cybersecurity is a tough field -- many people with a hackers’ mentality, not a scientist’s mentality
Jessica Alba discussed overcoming imposter syndrome

“How Jessica Alba Built A $1 Billion Company, And $200 Million Fortune, Selling Parents Peace Of Mind

Clare O’Connor
Entrepreneurs

“For a long time, I felt like an impostor. It's not until you feel whole in yourself that you fit in anywhere.”

The Honest Company Expands in Canada
Canadian consumers will now see more products by The Honest Company at retailers.

Impostor syndrome (also known as impostor phenomenon, impostorism, fraud syndrome or the impostor experience) is a psychological pattern in which one doubts one's accomplishments and has a persistent internalized fear of being exposed as a "fraud".

Public key infrastructure (PKI) episode during my graduate school (in 2003)

My collaborator from Sun Microsystems causally asked: “Are you familiar with PKI?”
Post-tenure depression (2014)
San Diego sabbatical (2016)
In that beautiful beautiful San Diego Torrey Hills Community Park in 2016, I had a profound and overwhelming sense of **FAILURE** -- as a researcher
When I felt like a loser, my past achievements didn’t make me feel better

ARO YIP Award (2014)
NSF CAREER Award (2010)
CACI Faculty Fellow (2014)
Outstanding New Assistant Professor Award (2012)

Brown University PhD (2007)
Indiana University MS (2002)
Princeton University MA (2000)
Peking University BS (1998)

3rd US Patent application ongoing by 2016 (approved in 2018)
Imposter syndrome is not just a female issue

• High achieving individuals
• People of color
• Immigrants
• Poverty
• Mental diseases
• Traumatic childhood
• Perceived incompetence of parents
• Not looking nerdy enough
“When are they going to discover that I am, in fact, a fraud and take everything away from me?”
– Tom Hanks (2017)
How to use your impostor syndrome as an asset

Take one look at my title, and you’d think I know what I’m doing when I turn up to work every day.

Over a decade ago I started a company straight out of university with a mate, Scott. We had no prior business experience and no grand plan. Today we have thousands of awesome employees, and millions of people across the planet use our software every day. Surely that kind of success comes from massive expertise and experience, right?
Public faces of imposter syndrome

Michelle Obama: 'I still have impostor syndrome'

Michelle Obama has said she still feels "impostor syndrome", adding that "it never goes away".

Anna Watson: I suffered from 'impostor syndrome' after Harry Potter – I felt like a fraud.
Not looking nerdy enough to be a scientist

My former student -- A masculine white male software engineering intern at Overstock.com mistaken as a janitor

For 22 years, people telling me “You smile too much.”

Not looking old enough to be a professor

“You’re the lead author of the work?”
Where does the society’s bias come from?
To smile or not to smile – that’s the question

Google search “University Professor”
Immigrants’ kids don’t think their parents know America
But... people with imposter syndrome get things done

Wake up at 5am and start working

Feel like I don’t deserve anything

Feel like I need to always do more (to prove myself to others)
If imposter syndrome is a motivator, then why do researchers need to be aware of it?

Why do researchers need to get rid of imposter syndrome?
Doubting yourself – thinking “I suck at research” or “I don’t belong” -- is devastating
DOGGED PERSISTENCE

WHAT IT MEANS TO “SCIENCE”
#smallworldinitiative
Time spent

Research skills
Quality of papers
Coding skills

Slow start phase
Rapid growth
Diminishing return
Why do researchers need to get rid of imposter syndrome?

Research is a luxurious activity; Creativity requires confidence & a peaceful mind

Research requires determination & persistence – big time

- Feeling like a fraud
- Doubting yourself
- Profound sense of faking, pretending
- No sense of belonging
My imposter syndrome usually kicked in when I was being interviewed (TV, news, radio stations reporters) for the achievements/inventions/discoveries I had...

I did well in my last interview (fall 2019) -- may have outgrown it!
Researchers need to be aware of imposter syndrome
Research requires confidence & persistence & passion & faith

Imposter syndrome erodes them
Passion meter -- Where are you as a researcher?

.dropout or semi-dropout zone

I want you to be here

https://dribbble.com/shots/2002802-Passion-Meter
Negative side effects of imposter syndrome – quit trying, compromise prematurely

**Quiz (pick one):**

**PhD is for people who are**
- A) Smart
- B) Patient
- C) Pulling all-nighters
- D) Creative
Another negative side effect of imposter syndrome – afraid of taking risks

Afraid of stepping into leadership positions & taking responsibilities

Afraid of failures, risk averse

Feeling unqualified or

Feeling others saying you’re underqualified
Research involves risks and uncertainties all the time.
A common pitfall in computer science graduate research

A profound sense of knowledge gaps

• “I need to read all these books first before I do research”
• Non-stop reading literature
• Unable to recognize novelty in own work

Working in a fast moving field
If your advisor had a better choice, he/she would not have asked you to do it.

So, you’re the best qualified person to do this work.
Learn from Janet Yellen

Former Chair of the Federal Reserve
Learn from Janet Yellen

“Don’t count me out yet.”

Yet another negative side effect of imposter syndrome – unable to defend your work against criticizers

“Your result is not surprising”
“Your work is insecure”
“You don’t have new math”
“Your work is not useful”
“Your result is not surprising”
“You should work on Y, instead of X”
“Not novel”
“You work is too rigorous for security conferences”
There’ll always be people who think you suck

Impossible to please everyone

There’ll always be attacks that evade detection

Impossible to achieve perfect security
How to cope with imposter syndrome?
It’s not to say that you should not work hard

Working hard ==/=== Having imposter syndrome

Hard working (being a subject expert) is a starting point of a researcher
Also don’t go to the other extreme

Don’t be Elizabeth Holmes
(Google “Theranos”)

Don’t be Billy McFarland
(Google “Fyre Festival”)
Know your strengths
MY WEAKNESS IS MY STRENGTH?
Daphne’s biggest moments of clarity

My weakness (e.g., abstract thinking) is precisely my strength!

Wait, people actually need me?
Daphne’s No. 1 tip for coping with imposter syndrome

1. Know/find your strengths

2. Let your strengths shine

3. Repeat
What if having no strengths?
Great minds don’t think alike

Recognizing other researchers’ style/strengths brings clarity to yours
What about your weaknesses?

Fake it till you make it?
What about weaknesses?

- Weakness
  - Is it a critical weakness?
    - NO: Do nothing or improve later
    - YES: Do you need it to get things done now?
      - YES: Can you delegate?
        - NO: WORK VERY HARD TO IMPROVE NOW!
        - YES: Delegate, use tools, or collaborate, ask for help
      - NO: Do nothing or improve later
Watch sports movies – overcoming self-doubt

The Replacements (2000)

The Waterboy (1998)
Have role models

They don’t have to look like you to be your role models

You can have more than 1 role model

Having role models for different scenarios

Role models don’t have to be famous
Find and build your support system
Find and build your support system

Women in Cybersecurity Research (CyberW) 2020 workshop speakers/organizers
I organize many inclusive excellence events
Find your allies

Women’s Reception at ACM CCS 2019, London UK
Celebrate every achievement!
Celebrate when a paper got published
What else to do to cope with imposter syndrome?

To watch out for imposter-syndrome-inducing incidents
GUARD your confidence

“Professor, are you sleeping?”

“Women usually suck at computer science and engineering.”

Sexual harassment incidents
Growing thick skin alone is not sufficient

“Lean in” alone is not enough

Need to build better support systems

Female population at different tiers of the Columbia University Vagelos College of Physicians and Surgeons hierarchy as a percentage of the total
Science will be better if everyone contributes and shines
Daphne’s comments on a recent women in tech panel

YouTube Video Recording: https://youtu.be/JqFKv9Rg0k8