



# **Taking back control of your life with Nerves**

# Hello!



**My name is Ju** 🙇

# *whoami*

- I was born in 
- Grew up in 
- Live in 
- Work for **noredink** 

# Structure of this talk

1. Doom & Gloom
2. What we can do about it

*What, then, is to be done? To make the best of what is in our power, and take the rest as it naturally happens.*

*— Epictetus*

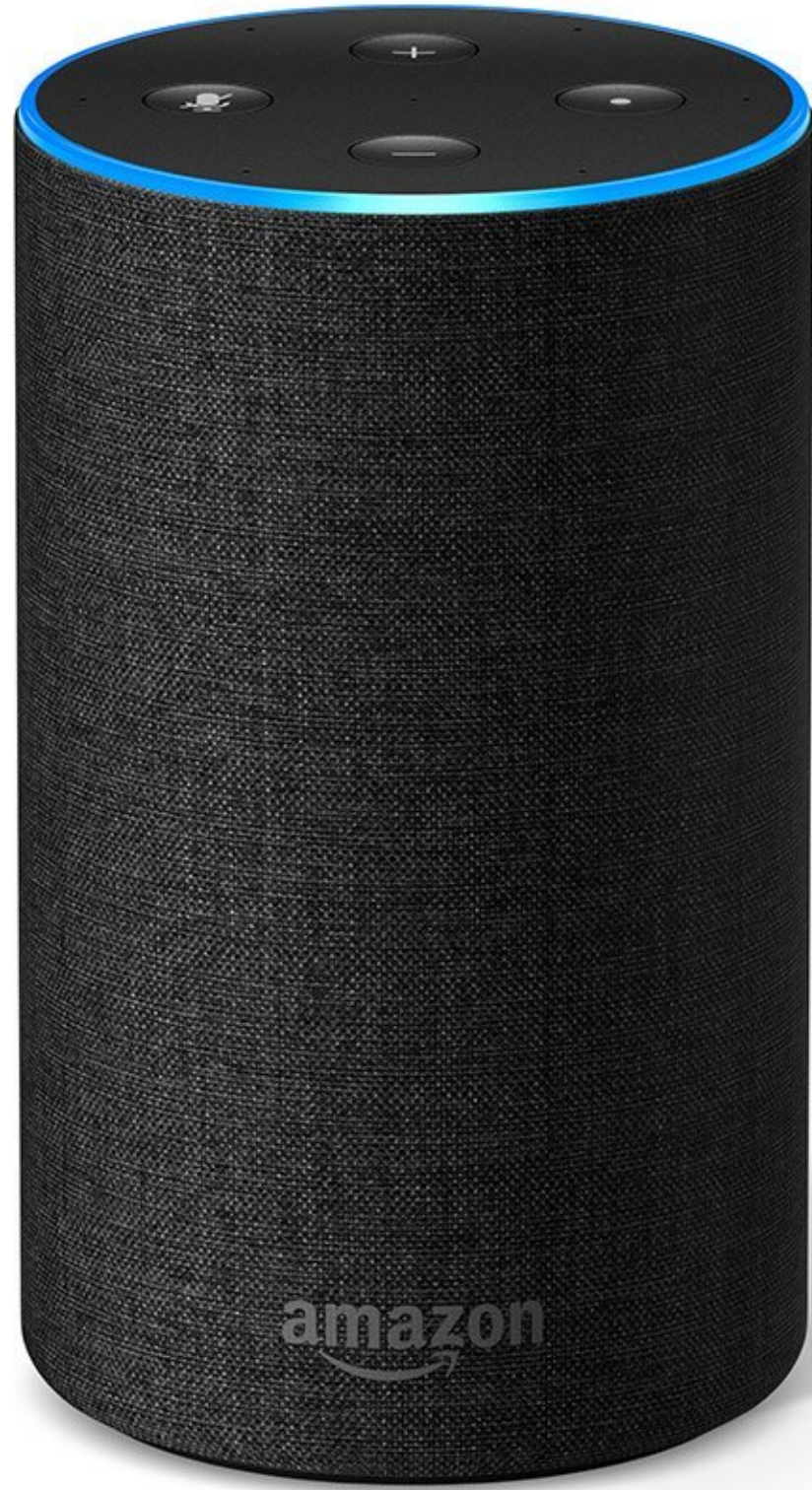
**What this is talk  
is NOT going  
to be about**



Let's take  
back control







# Amazon workers are listening to what you tell Alexa<sup>1</sup>

<sup>1</sup> <https://www.bloomberg.com/news/articles/2019-04-10/is-anyone-listening-to-you-on-alexa-a-global-team-reviews-audio>

# Amazon confirms it retains your Alexa voice recordings indefinitely<sup>2</sup>

<sup>2</sup><https://thenextweb.com/security/2019/07/03/amazon-confirms-it-retains-your-alexa-voice-recordings-indefinitely>

# Judge orders Amazon to turn over Echo recordings<sup>3</sup>

<sup>3</sup><https://techcrunch.com/2018/11/14/amazon-echo-recordings-judge-murder-case>

# **Alexa, are you invading my privacy? The dark side of our voice assistants<sup>4</sup>**

<sup>4</sup> <https://www.theguardian.com/technology/2019/oct/09/alexa-are-you-invading-my-privacy-the-dark-side-of-our-voice-assistants>

# Alexa, are you invading my privacy? The dark side of our voice assistants

*“I felt a bit foolish,” he says. “Having worked at Amazon, and having seen how they used people’s data, I knew I couldn’t trust them.”*





# ring | Video Doorbell 3 Plus

Replace your existing doorbell  
with smart security





*One ring to bring them all,  
and in the darkness bind them.*

*— Sauron, The Dark Lord*



ring

# Oh, Yes.

# Doorbell-camera firm Ring has partnered with 400 police forces, extending surveillance concerns<sup>5</sup>

<sup>5</sup> <https://www.washingtonpost.com/technology/2019/08/28/doorbell-camera-firm-ring-has-partnered-with-police-forces-extending-surveillance-reach>



# Doorbell-camera firm Ring has partnered with 400 police forces, extending surveillance concerns

*Ring is owned by Amazon, which bought the firm last year for more than \$800 million, financial filings show. Amazon founder Jeff Bezos owns The Washington Post.*

# Oh, No.

# So what's the point?

# The Point™

1. As a user of a smart device, you have literally no control over what it does.
2. No matter how well intentioned you think the maker is.
3. One day they will get acquired.
  1. If you're lucky, all your data will be sold.
  2. If you're unlucky, your device will be bricked.

# **Snips, privacy-by-default voice technology, acquired by Sonos<sup>6</sup>**

<sup>6</sup> <https://investors.sonos.com/news-and-events/investor-news/latest-news/2019/Sonos-Announces-Acquisition-of-Snips/default.aspx>

# Revolv devices bricked as Google's Nest shuts down smart home company<sup>7</sup>

<sup>7</sup> <https://www.theguardian.com/technology/2016/apr/05/revolv-devices-bricked-google-nest-smart-home>



# Why do we buy smart devices?

- They look cool
- They fix minor annoyances
- They're internet connected

**We are trading our privacy and our  
lives to know what's the weather  
like in Glasgow\*\***

**\*\* It's raining.**

# What's the alternative?

# DIY

**The only way trust a smart device is  
to know exactly what it does.\***

\* Limitations apply

ElixirConfEU · @arkh4m

**And the only way to do that is to  
build it yourself.**



# No, there is no other way.

**I know. It's takes time and effort to  
become a circuit whisperer.**

**But as engineers we are in a TRULY  
privileged position to fight back.**

*Any sufficiently advanced technology  
is indistinguishable from magic.*

*— Arthur C. Clarke*



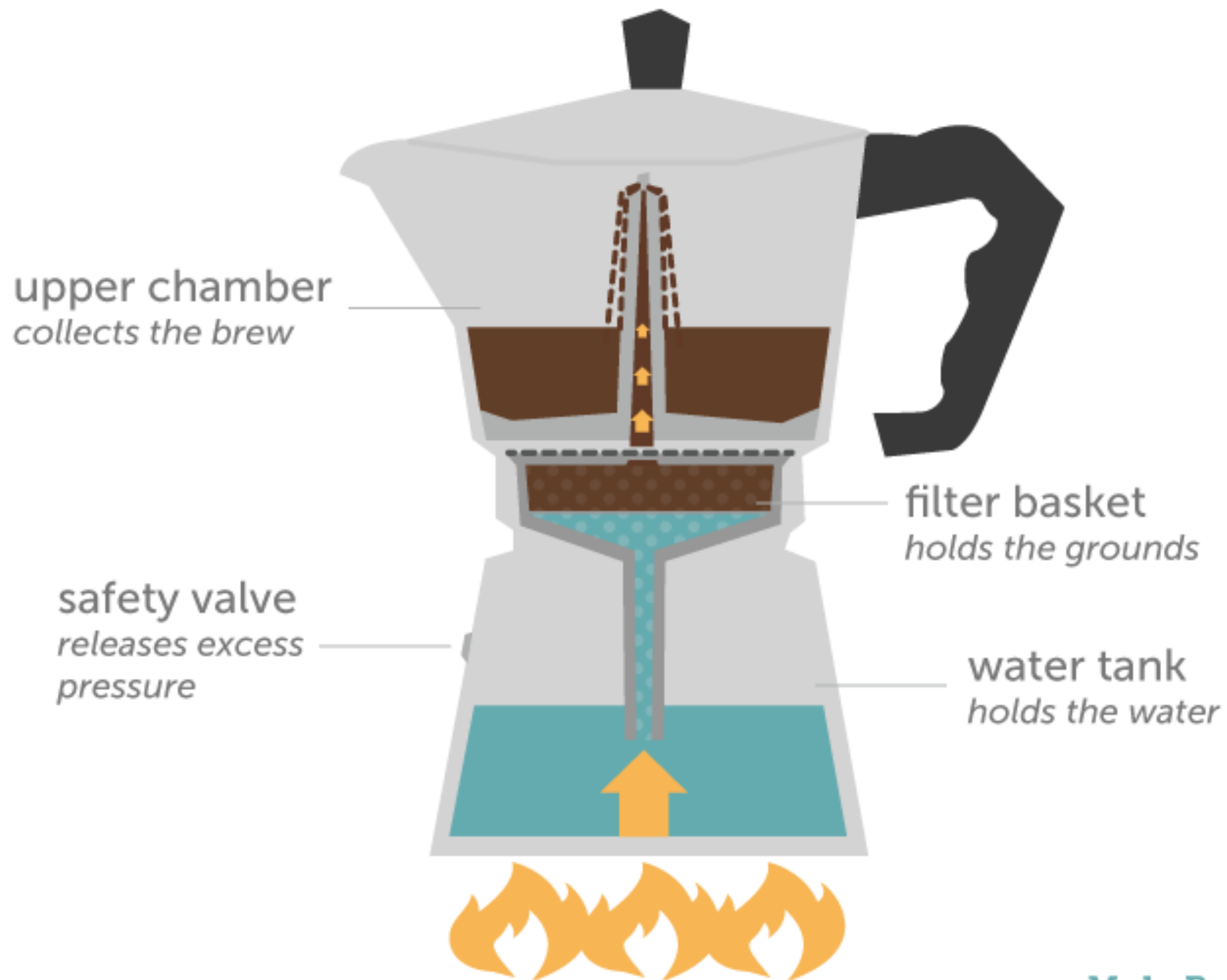
[Platform](#)[NervesHub](#)[Case Studies](#)[Resources](#)[Get Started](#)

# Craft and deploy bulletproof embedded software

Nerves is a complete IoT platform and infrastructure for you to build and deploy maintainable embedded systems.

[GET STARTED](#)







# My First World Problem

1. Go to the kitchen and fill up the moka.
2. Put it on the stove on a low setting.
3. Go back to my office to work on some stuff.
4. Keep doors open so I can hear the rumbling.
5. Get distracted.
6. Run to the kitchen when it's too late.
7. Burnt coffee 🐱💧

**But.. What if I built a machine  
which can tell me when the coffee  
is ready?**

# DEMO TIME ☕



# Manage OTA Firmware Updates Across Your Devices

NervesHub is an extensible web service that allows you to manage over-the-air (OTA) firmware updates of devices in the field. Built with Phoenix, NervesHub delivers first-class support for hardware deployments directly from the command line.

GET STARTED

LOG IN

TRY FOR FREE



# ANOTHER DEMO



Thank you! 🙏

🦜 @arkh4m

🗣️ github.com/Arkham/tbcofylwn

☕ github.com/Arkham/mokay

🤖 github.com/Arkham/tee\_eff\_elle

# References

- Nerves Getting Started
- NervesHub Setup