

# Why SREs can't afford to NOT do Chaos Engineering

Engineering

Bloomberg

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# Today's Talk

- What is Chaos Engineering?
- What Chaos Engineering is NOT?
- Where do I start?
- Tools
- Chaos Engineering (for) people

# Chaos Engineering

*“Chaos Engineering is the discipline of **experimenting** on a system in order to **build confidence** in the system’s capability to **withstand turbulent conditions** in production.”*

-- Principles of Chaos Engineering  
<https://principlesofchaos.org>

# Chaos Engineering

“ *experimenting*  
*to build confidence*  
*to withstand turbulent conditions* ”

-- Principles of Chaos Engineering  
<https://principlesofchaos.org>

# Chaos Engineering

*Reliability*

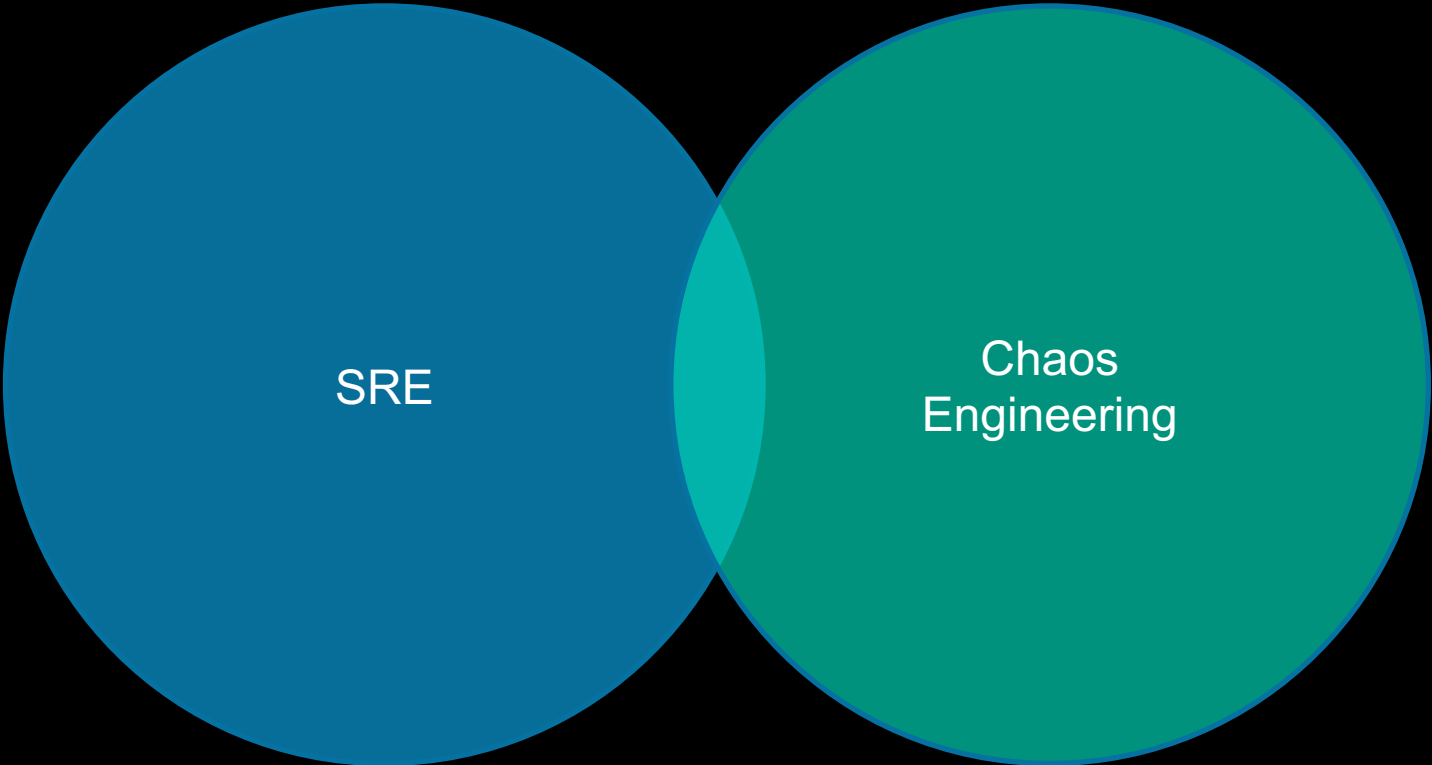
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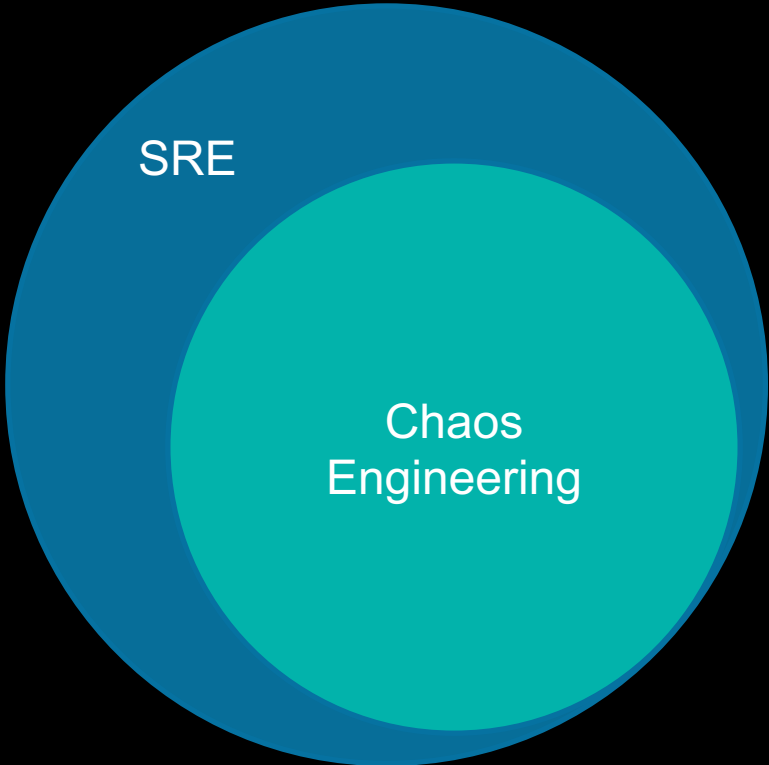
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# Chaos Engineering & SRE



# Chaos Engineering & SRE

Or perhaps... this?



# Chaos Engineering myths

- "It's Chaos Monkey, right?"
- "It's testing in production"
- "It's only for massively distributed systems systems"
- "It only works on <insert the technology here>"
- "It's breaking things randomly"

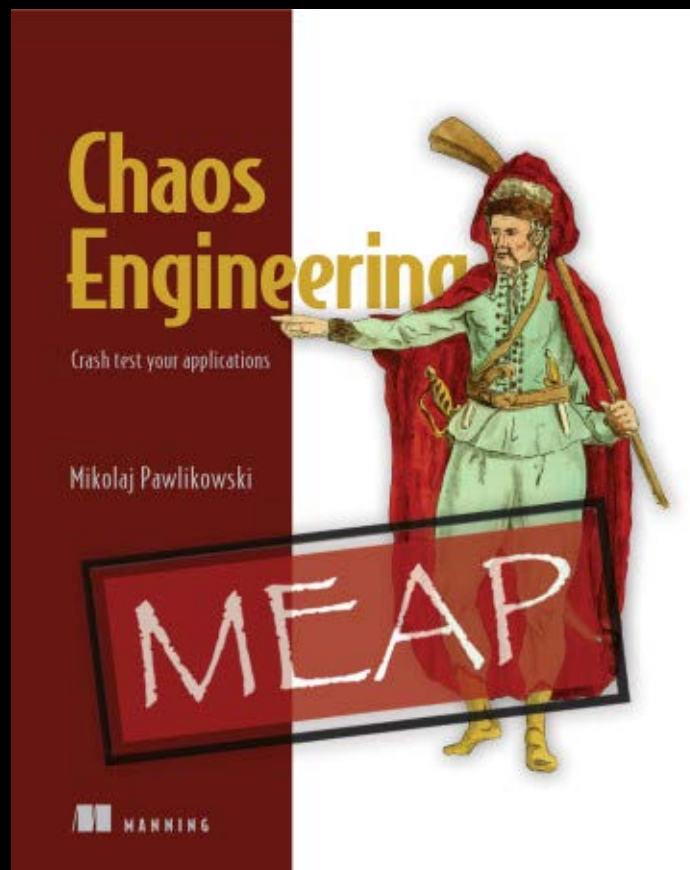


# Chaos Engineering in 4 steps

1. **Observability:** pick a variable and a reliable way of measuring it
2. **Steady state:** the normal range for the variable
3. **Hypothesis:** when X happens, the variable behaves like this
4. **Run the experiment!**

Fun gimmick => scientific method

# Demo 1



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# Demo 2

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# Where do I start?

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Risk vs. reward; ROI



# Leading Causes of Death

Data are for the U.S.

## Number of deaths for leading causes of death

- Heart disease: 647,457
- Cancer: 599,108
- Accidents (unintentional injuries): 169,936
- Chronic lower respiratory diseases: 160,201
- Stroke (cerebrovascular diseases): 146,383
- Alzheimer's disease: 121,404
- Diabetes: 83,564
- Influenza and pneumonia: 55,672
- Nephritis, nephrotic syndrome, and nephrosis: 50,633
- Intentional self-harm (suicide): 47,173

# Chaos Engineering (for) people



# Tools

<https://github.com/powerfulseal/powerfulseal>

<https://chaostoolkit.org>

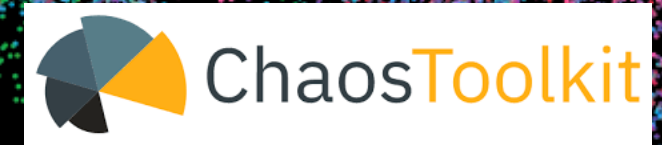
<https://github.com/alexei-led/pumba>

<https://github.com/Shopify/toxiproxy>

<https://github.com/Netflix/chaosmonkey>

<https://byteman.jboss.org/>

<https://github.com/storax/kubedoom>



More: <https://github.com/dastergon/awesome-chaos-engineering>

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# Chaos Engineering: Site reliability through controlled disruption

Manning

<https://www.manning.com/books/chaos-engineering>

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# Chaos Engineering

Crash test your applications

Mikolaj Pawlikowski

MEAP

MANNING



# Let's connect!



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# Thank you!

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