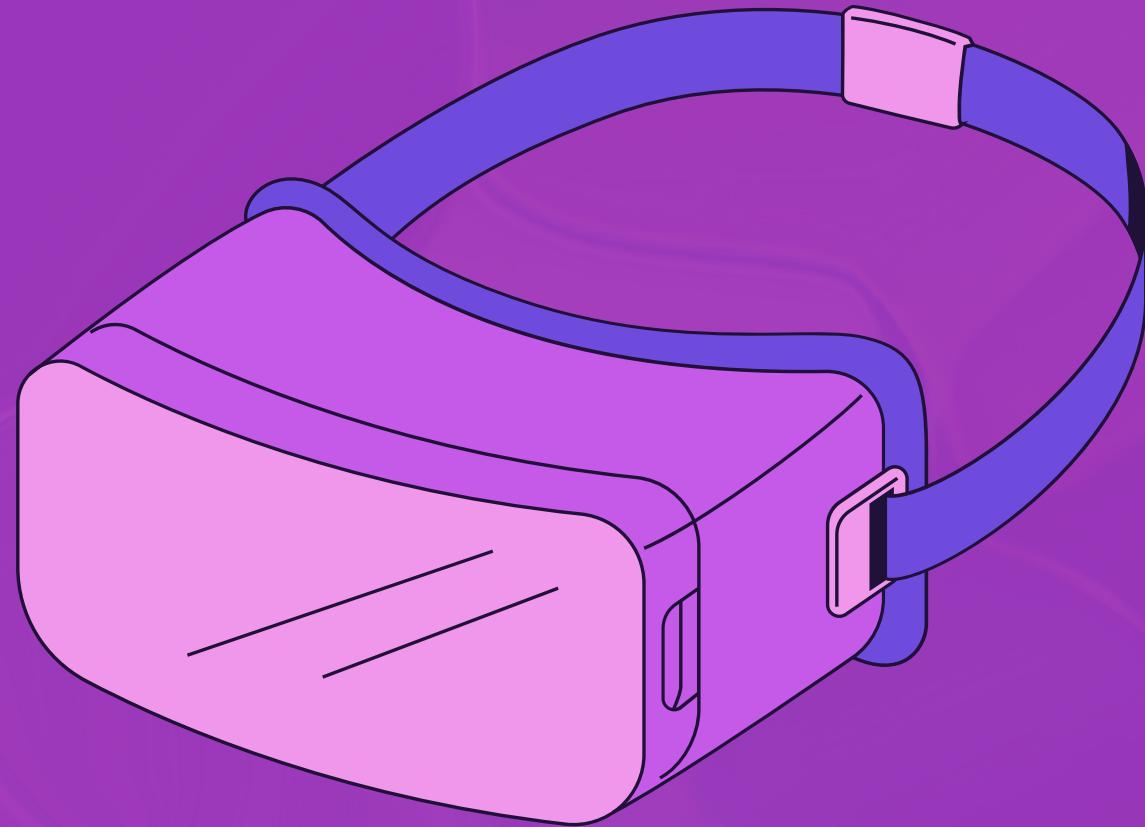
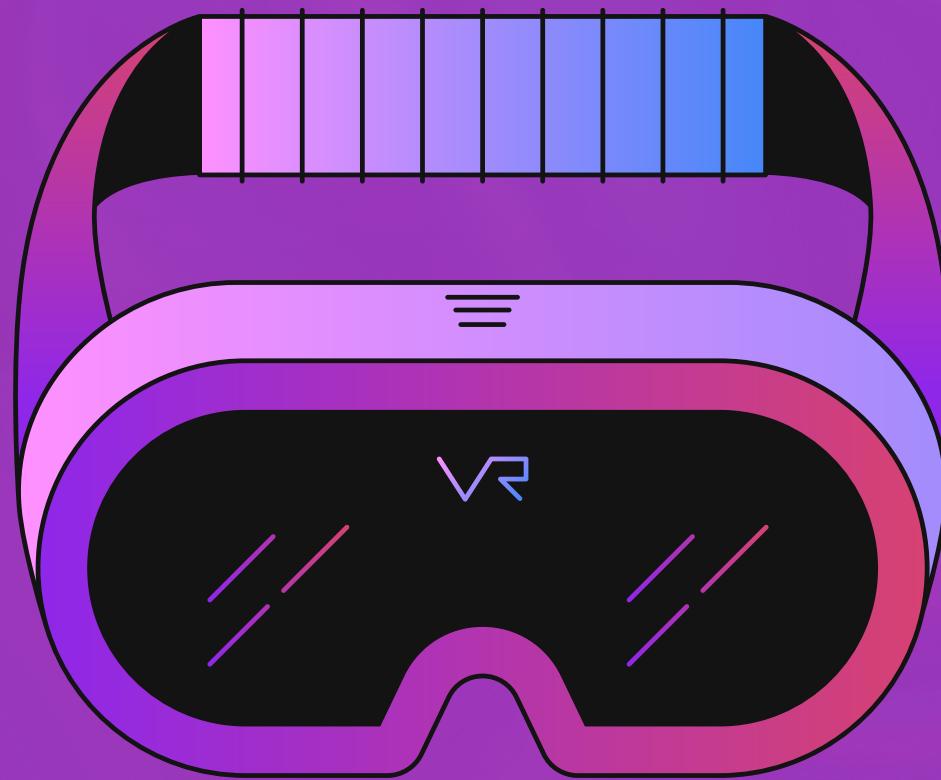


# THE SUPERIORITY OF VIRTUAL REALITY SIMULATION OVER REAL WORLD PRACTICE

TRAINING THE FUTURE: WHY VR IS THE  
SAFER, SMARTER CHOICE



Presented by Teuku Ismail Syuhada

# THE PROBLEM WITH TRADITIONAL TRAINING

## The Challenge we Face

High-stakes professions require extensive practice

Aviation & Medicine: Too dangerous to learn by trial and error

Fatal mistakes can happen during learning

Traditional training = Real world risks





# THE VR SOLUTION

## A Revolutionary Alternative

- **Safe, controlled training environment**
- **No real-world consequences**
- **Unlimited practice opportunities**
- **Evidence shows VR is MORE effective than physical practice**



# WHY VR SIMULATION IS SUPERIOR

**VR simulation outperforms real-world practice because it provides:**

- 1. Absolute safety with unlimited repetition**
- 2. Accurate data-driven skill measurement**
- 3. Massive cost reduction**

# 1. SAFETY & CONTROLLED REPETITION



## The Problem:

- Can't intentionally crash planes for training
- Can't practice on real patients without risk

## The VR Solution:

- Practice engine failures & severe storms safely
- Surgeons rehearse complex procedures repeatedly
- No fatal consequences = Focus on mastery, not fear

## 2. OBJECTIVE DATA & ACCELERATED LEARNING

### Traditional Feedback:

- **Subjective:** "Your hand was too slow"
- **Imprecise and unmeasurable**

### VR Data Tracking:

- **Precise measurements:** hand tremors, reaction times (milliseconds)
- **Tool movement accuracy tracked digitally**
- **Instant, accurate feedback = Faster skill development**
- **Brain & muscles adapt more quickly**

# 3. MASSIVE COST REDUCTION

**Real-World Training Costs:**

**Aviation: Fuel, maintenance, airport fees**

**Medicine: Surgical tools, specialized facilities**

**Limited practice time due to budget constraints**



**VR Training Costs:**

**Initial hardware/software investment only**

**Near-zero cost for repeated practice**

**No fuel, no equipment waste**

**Expertise determined by effort, not money**

# CHALLENGES & RESPONSES



## Current Limitations:

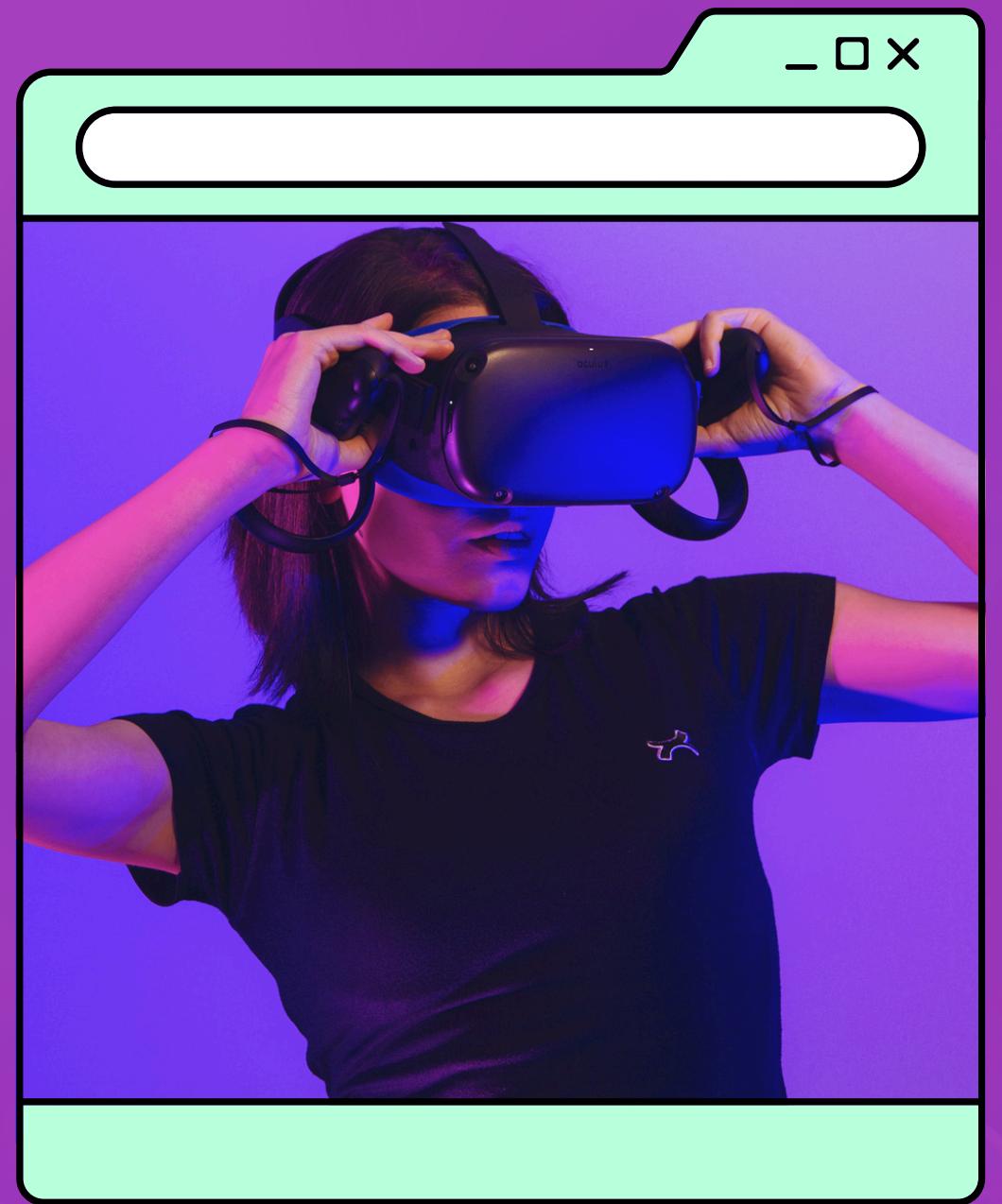
- **High initial setup costs**
- **Motion sickness / discomfort**
- **Touch sensation not perfectly realistic**

## However:

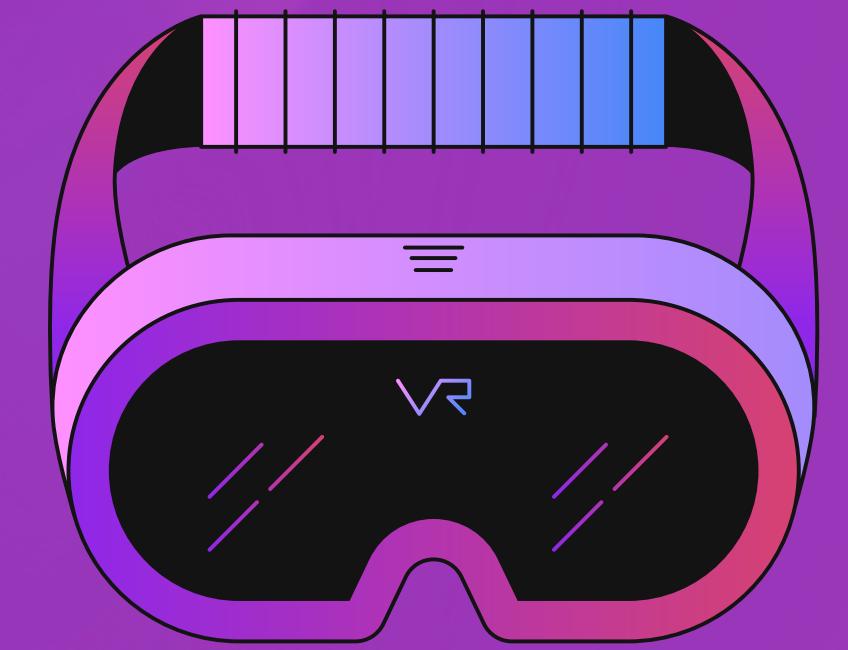
- **These are temporary technological limitations**
- **Technology improves rapidly each year**
- **The massive benefits—saving lives and accelerating expertise—far outweigh these minor drawbacks**

# CONCLUSION: THE FUTURE OF EXPERT TRAINING

**While real-world practice has been the traditional standard for centuries, it is no longer the most efficient or safest method. VR simulation is the superior training approach because it ensures safety without risk, enables data-driven accelerated learning, and delivers significant cost savings. By mastering dangerous jobs in simulation, professionals enter the real world perfectly prepared—not through trial and error, but through deliberate, risk-free practice.**



ANY  
QUESTION?



**THANK YOU**  
**FOR YOUR ATTENTION**