

TECHNICAL SEMINAR

Augmented Reality

Blending digital content with the real world

PRESENTED BY

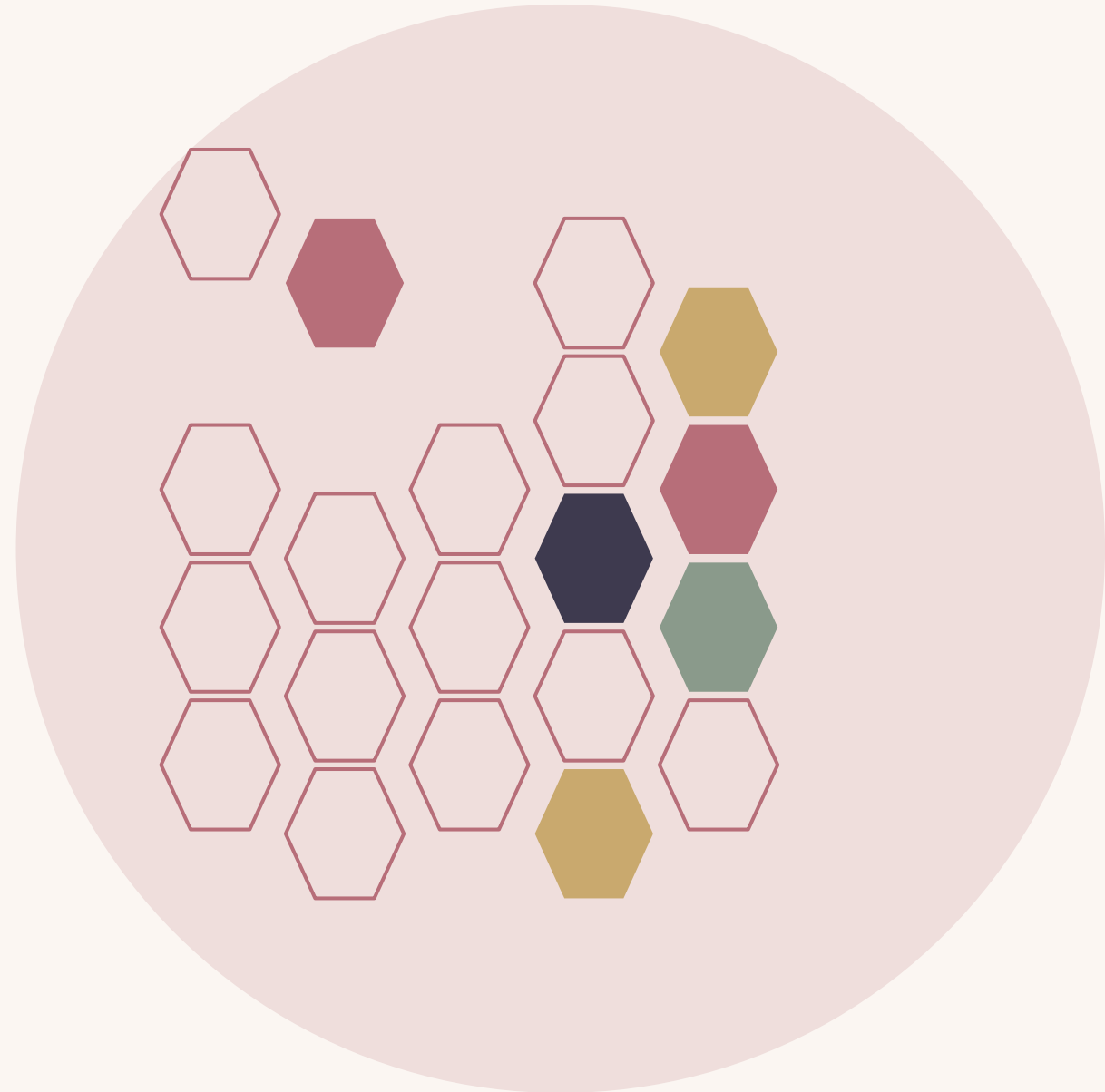
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GUIDE

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DATE

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Agenda

01

Overview

02

Core concepts

03

Applications

04

Challenges

05

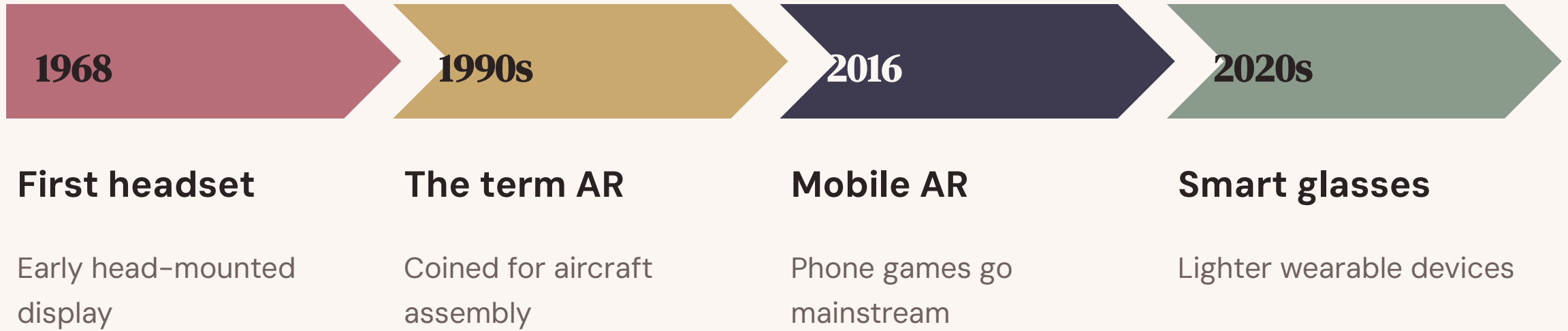
Future

Introduction

- AR overlays digital information on what we see
- It runs on phones, tablets and smart glasses
- Used in retail, education, maintenance and games
- Advances in sensors and AI make it practical



Evolution



Key concepts

01

Tracking

Knowing where the device is and what it sees.

02

Rendering

Drawing 3D content aligned to the world.

03

Interaction

Touch, gaze, voice and gestures.

Architecture



Architecture diagram

Camera, sensors and a real-time 3D engine.

An AR app combines camera frames with motion sensors to map the environment, then a 3D engine renders virtual objects that stay locked to real surfaces as the user moves.

Applications



Image 1

Retail

Try furniture or glasses at home.



Image 2

Education

3D models of the heart or planets.



Image 3

Maintenance

Step-by-step repair overlays.

Advantages and limitations

Advantages

- ✓ Hands-on learning
- ✓ Fewer errors in field work
- ✓ Engaging marketing
- ✓ Works on existing phones

Limitations

- Battery and heat
- Motion sickness for some
- Privacy of camera data
- Content is costly to create

Open challenges

01

Hardware

Glasses still bulky.

02

Content

3D assets take time.

03

Privacy

Always-on cameras.

KEY IDEA

**Lightweight glasses
could make AR an
everyday interface.**

Looking ahead

Conclusion

- AR adds context to the real world
- Phones already make it accessible
- Hardware and content are the next frontiers

Questions?

Thank you for listening.

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