THE UNIVERSITY OF WESTERN AUSTRALIA

The Internet of Things – CITS5506

Alexander Liffers
Development Team Lead

Background

Worked in the IT industry since 1990

- Tutoring on different Unix, Amiga, and MS-DOS in high school
- Computer Science and Electronic Engineering at UWA
- Professional career started with the dawn of the Internet

Early industry challenges are echoes of IoT challenges now

- Low resources (CPU/RAM/Storage)
- Many different network technologies
- Software makes compromises
- Reliability concerns

What's New

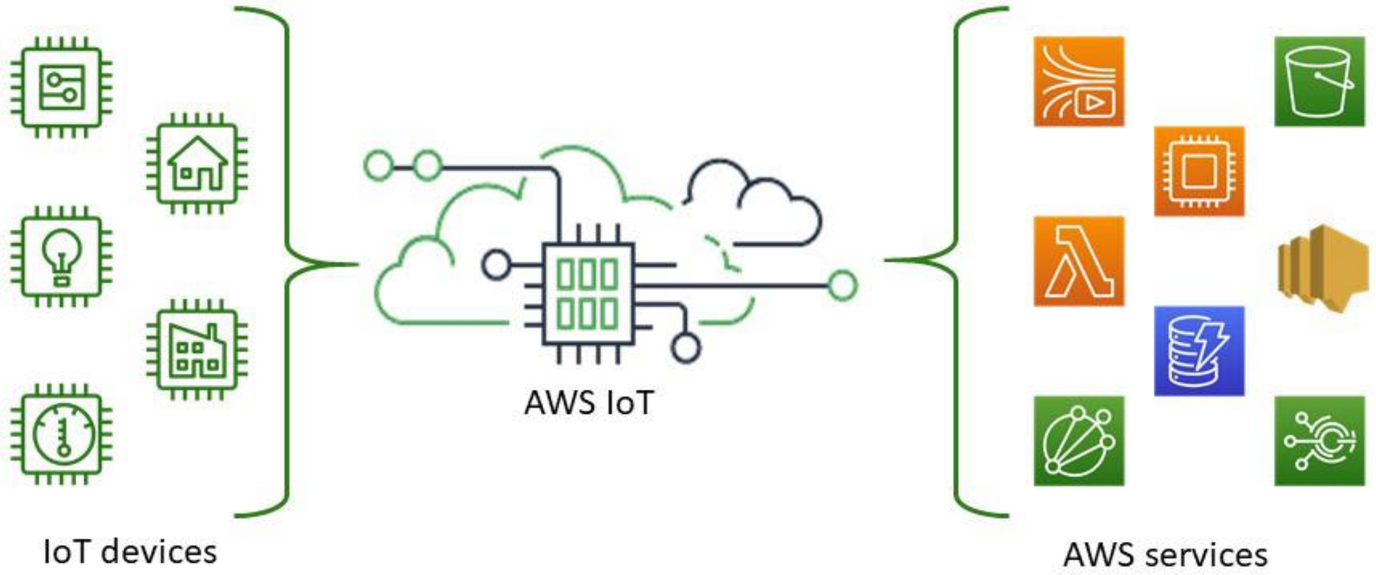
Standards

- Wifi, Bluetooth, Lora, LTE
- TCP/IP
- HTTP, MQTT, AMQP
- XML, jSON
- Security and Encryption

Technology

- Service Buses
- Large scale databases
- Prepared Cloud Solutions

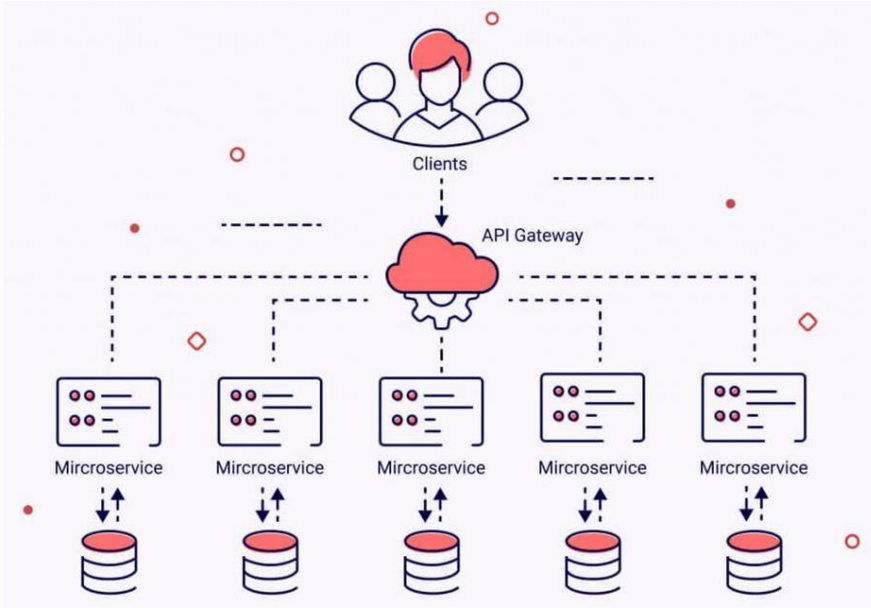
Better Designs



Think Laterally

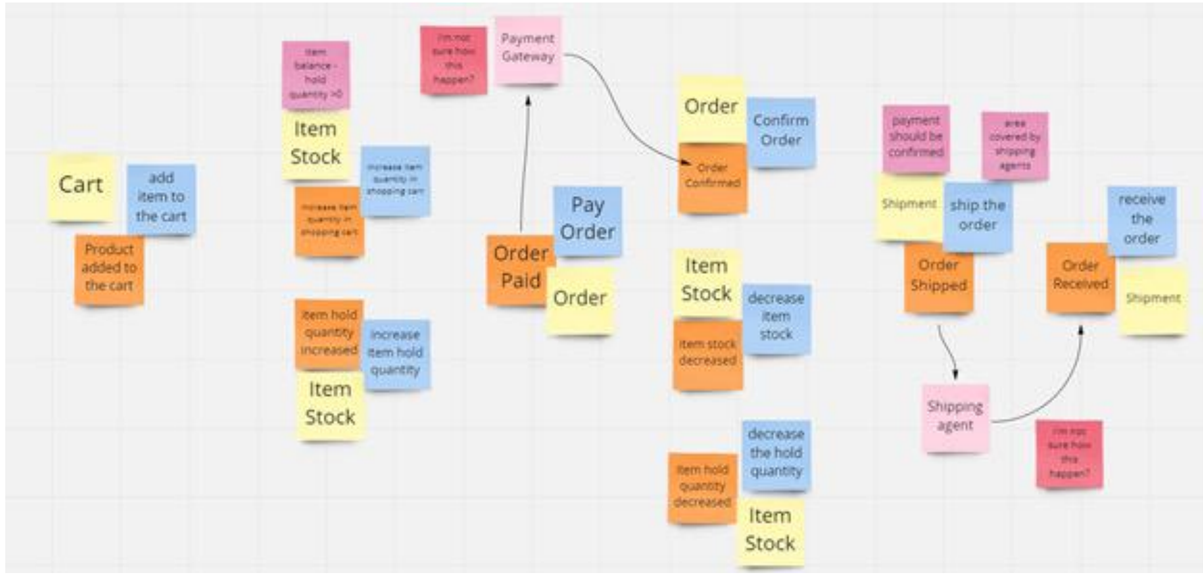
Skills learned aren't specific to a single technology when looking for work; **concepts transfer**.

- Event-driven Architectures
- Domain Driven Design
- Microservice Architecture
- Managing large-scale messaging
- Reliable and redundant integration
- Data design and analysis



A lot of the time, we work with the **output of IoT**, not the devices themselves

- Fleet Management Systems (FMS)
- Continuous Emissions Monitoring Systems (CEMS)
- Smart Meters



Professional Development

University teaches concepts and principles, you learn tools and platforms, and we train the application to business problems.

Continuous Learning

- Get familiar with the tools used in the industry
- LinkedIn Learning, Pluralsight, Udemy

Ongoing Qualifications

- Microsoft Certified: Azure Developer Associate
- AWS Certified: Developer Associate

Professional Curiosity

- AWS Free Tier Account
- Azure Free Services

Questions?