

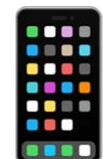



The power of Telemetry

Unveiling the vital link between IoT and Mobile

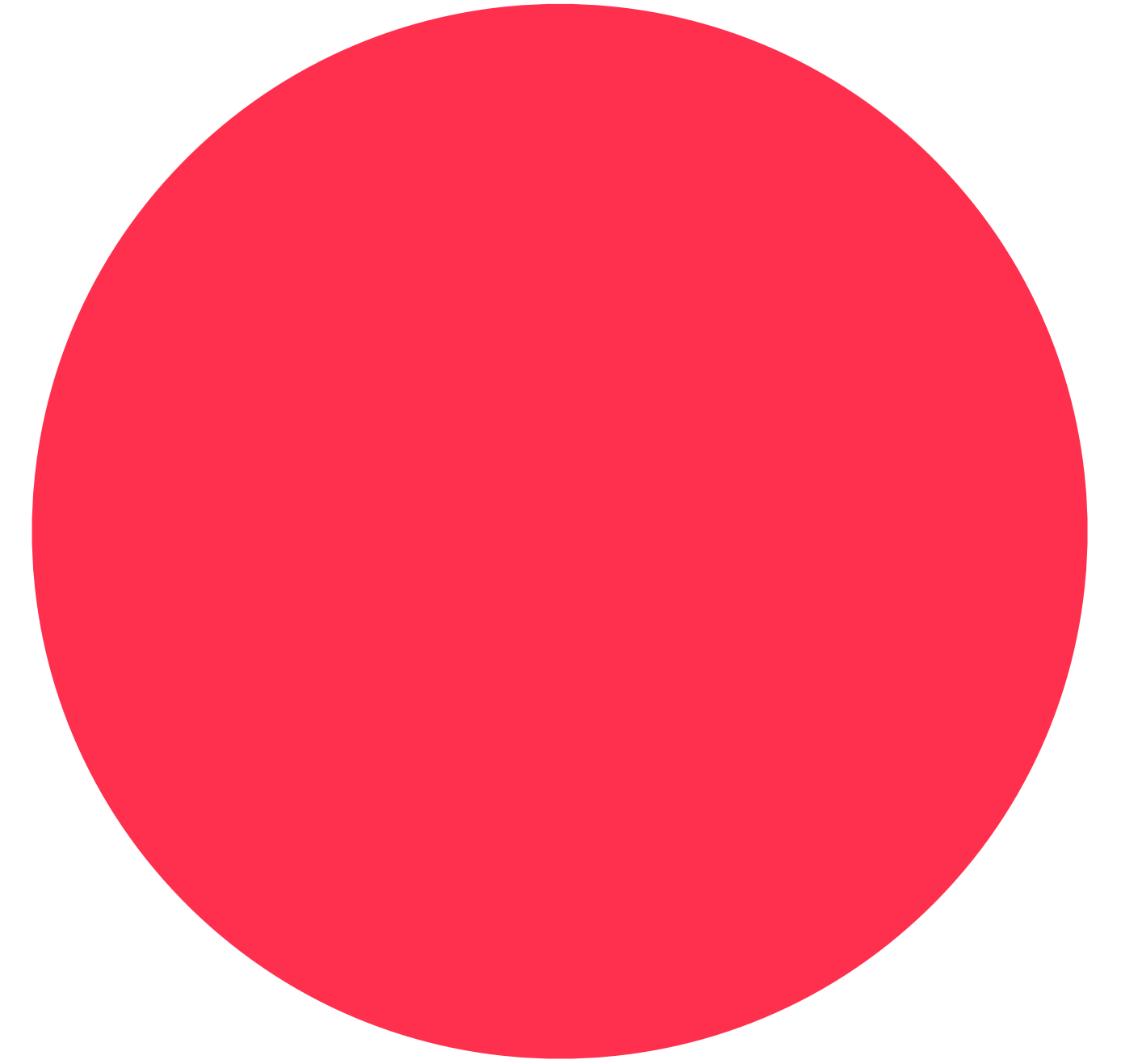
Matteo Crippa 🙌

Matteo Crippa



-  **Senior mobile engineer**
-  **15+ years in mobile and IoT projects**
-  **Built telemetry tools for challenging environments**
-  **OSS contributor**

Intent



- **Mobile team lead**
- **10+ years experience in design & build apps for connected devices**
- **Our clients include Oura, BOSE, and McIntosh audio**

What is / (ti'lemtri) /?

Automated data collection & monitoring

Examples:

- 📊 Wearable
- 🚗 Smart cars

Crucial for real-time debugging and analysis





Direct vs Indirect

 **Device has standalone Internet connection**

✗ Device has no Internet connection (eg. BLE)

Telemetry > Logging



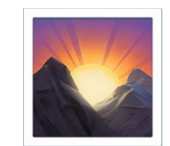
Logging

- **✗** Developer-dependent
- **✗** Misses key data and requires time to set-up

Telemetry

- **✓** Automated, detailed, real-time
- **✓** Like a transparent proxy

Why context matters



Mountain climbing

- **High altitude, low connectivity**



Swimming

- **Underwater, high pressure**

Debugging in these environments? **Challenging!**



Telemetry Data

Metrics tracked in a timeline

- 📡 Connection status & RSSI (signal strength)
- 🔋 Battery levels
- 🚦 Commands sent/received
- 🛑 BLE error codes
- 🌐 Firmware version


Visualisation makes debugging faster!



Telemetry in action



Scenario: BLE tracker in a swimming pool

- **Issue:** Signal intermittent
- **Resolution:** Telemetry identified weak RSSI instantly 
- **Result:** Debugged in hours, not days!

Behavioural debugging

User is missing data about his training

Log debugging

Battery update 55%

Peripheral disconnects

Telemetry debugging

GATT notify

Firmware 0.2

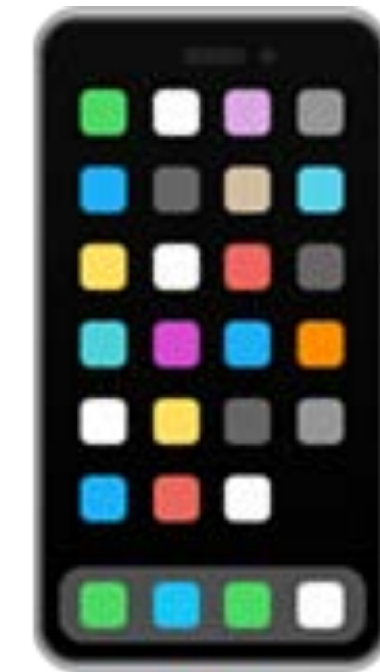
Battery 5%

Disconnected

Multiplatform Support

Supported platforms

- iOS
- Android
- Flutter
- React Native



Debugging without Telemetry?

Pain points

- Incomplete data
- Time-intensive debugging
- Edge cases missed (altitude, pressure, etc.)
- Repeat many times to catch the issue

Why using telemetry?



-  **Save time-to-market**
-  **Cut debugging/testing costs**
-  **Improve reliability = happier users** 

Questions & Discussions

Let's explore your telemetry needs!

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