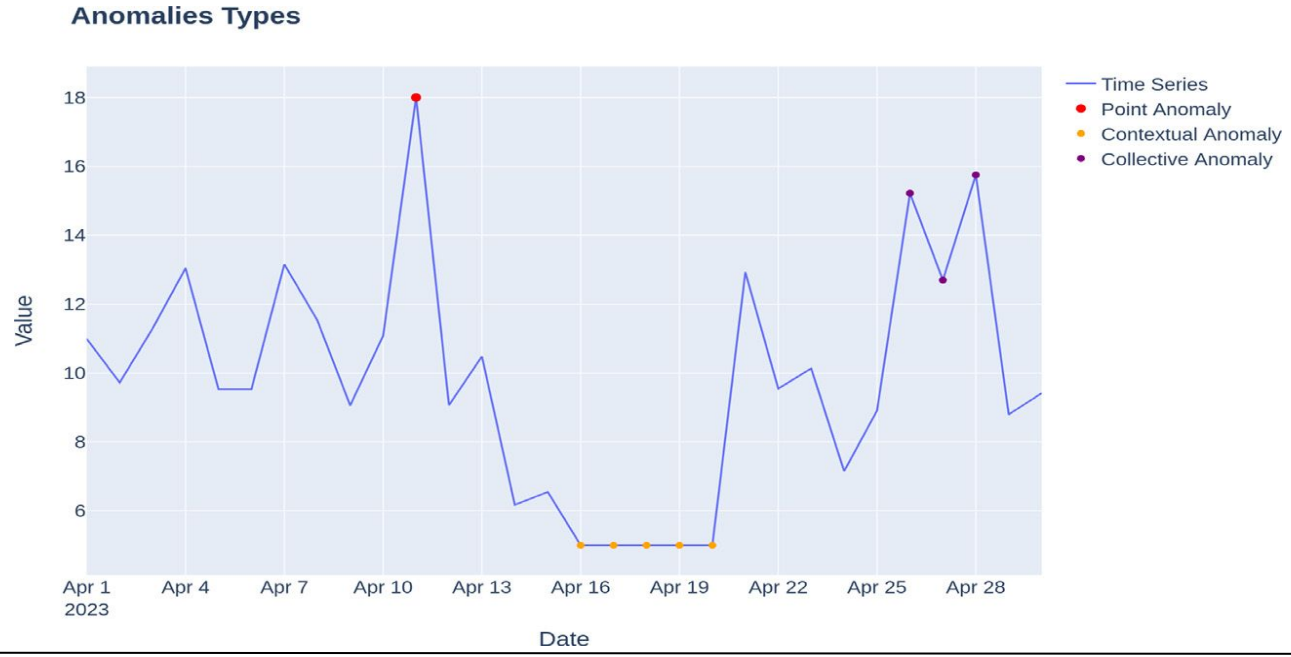
TinyML: Use Case

Contents

Introduction

- **Definition**

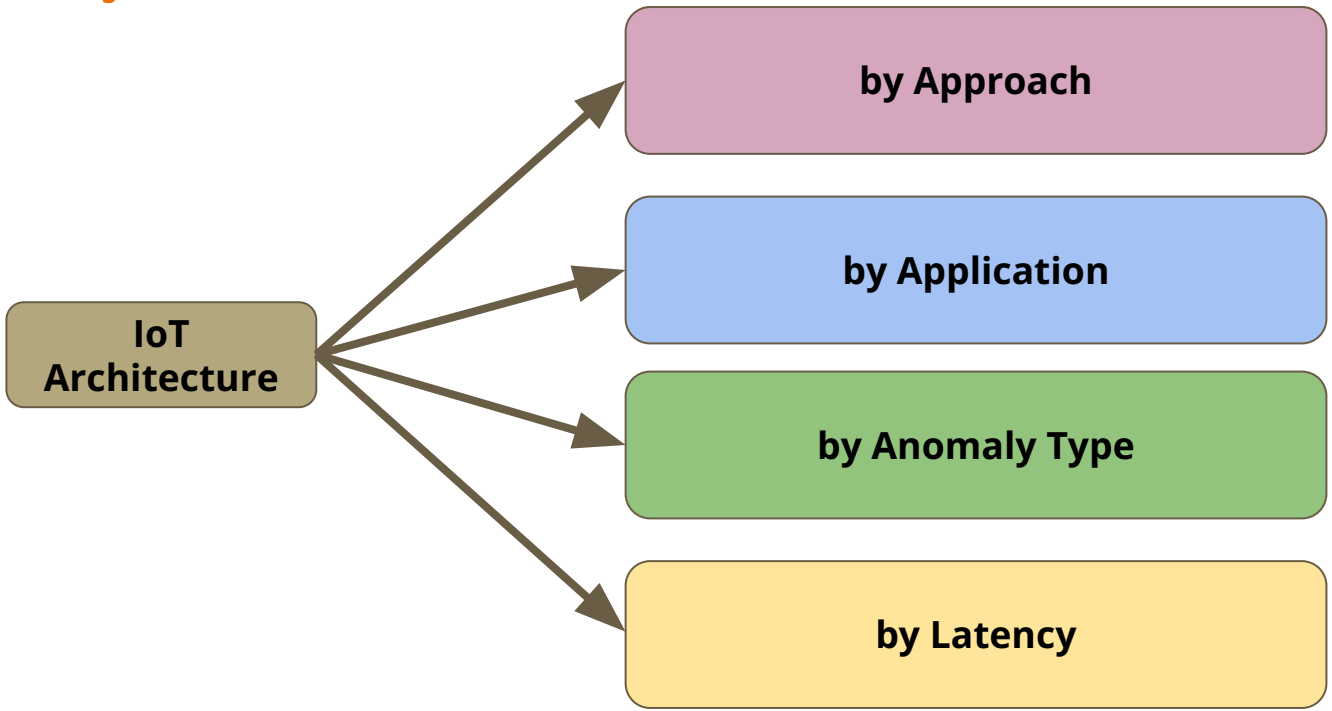


[1] Sergio Trilles, Sahibzada Saadoon Hammad, Ditsuhi Iskandaryan, Anomaly detection based on Artificial Intelligence of Things: A Systematic Literature Mapping, Internet of Things, Volume 25, 2024, 101063, ISSN2542ISSN 2542-6605, https://doi.org/10.1016/j.iot.2024.101063.

Necessity of Identifying Anomalies in Sensor Outputs

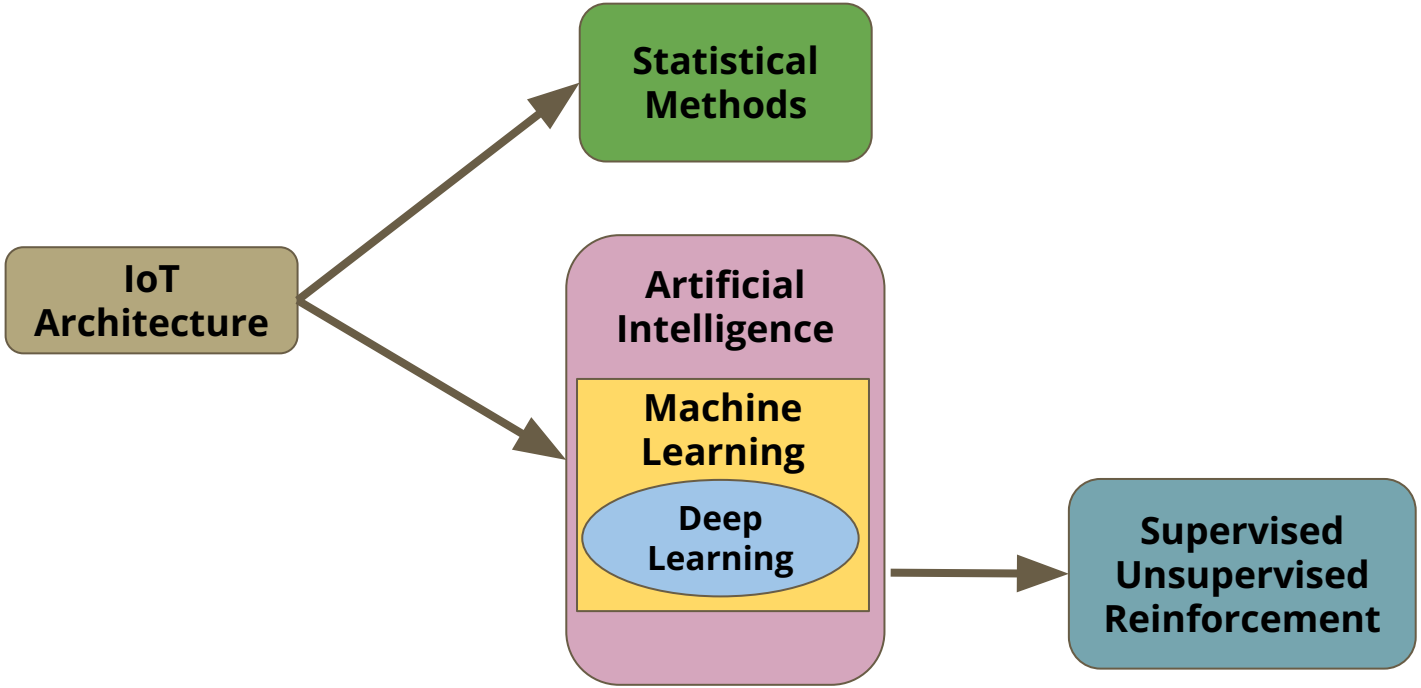
- Network Infrastructure
- Network Management
- Network Flows and Their Types
- Focuses mainly on Unseen data

Anomaly Detection



[2] Ayan Chatterjee, Bestoun S. Ahmed, IoT anomaly detection methods and applications: A survey, Internet of Things, Volume 19, 2022, 100568, ISSN 2542-6605, https://doi.org/10.1016/j.iot.2022.100568.

Anomaly Detection



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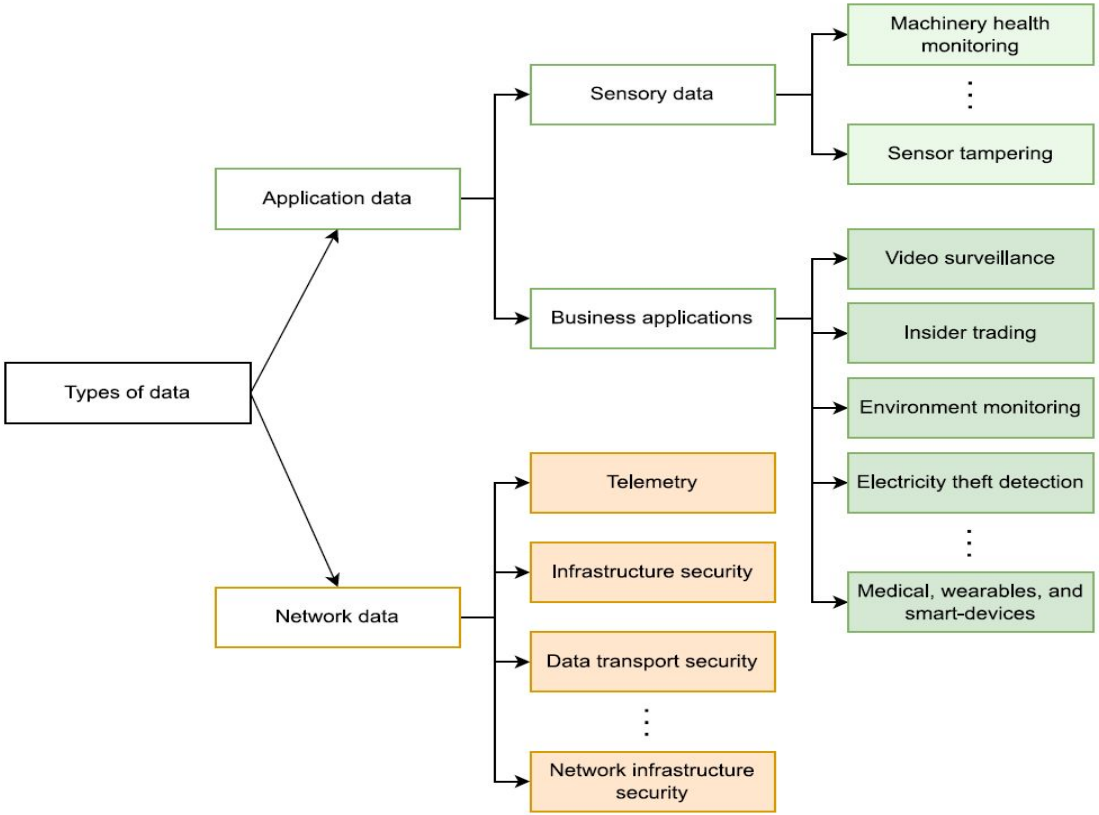
Anomaly Detection



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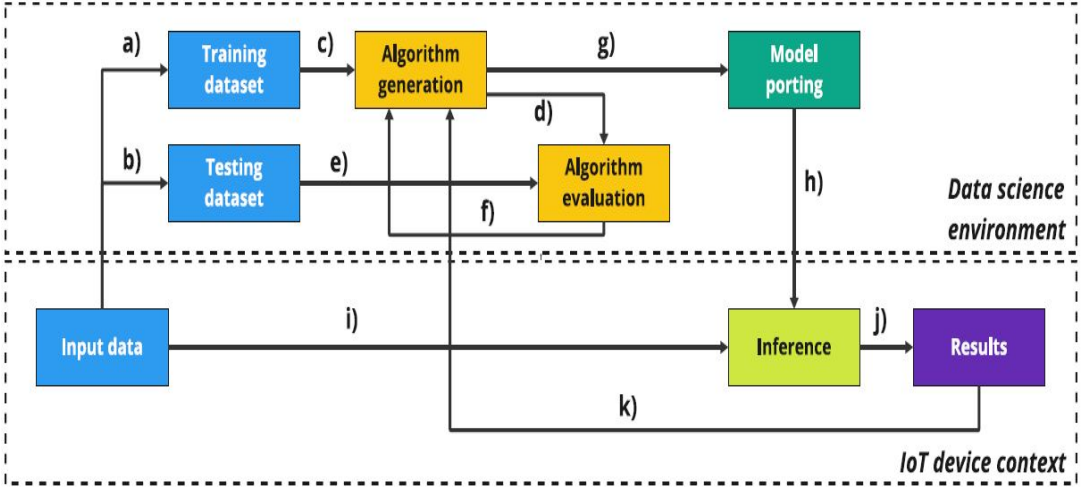
Detection Process

- Collecting Sensor Data
  - https://wokwi.com/projects/432211042162208769
  - https://thingspeak.mathworks.com/channels/2973339
- KMeans to generate labels
- Train a Neural Network
- Perform Quantization
- Generate hex code
- Deploy on Edge device



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THANK YOU