Bachelor’s Thesis
Stream processing for IoT infrastructure

Context
Nowadays IoT infrastructure providers like AWS, IBM, Microsoft and Google are launching new types of IoT services. These services center around Quality of Service aspects of IoT applications like, e.g., reliability, capacity and delay. In order to avoid Vendor lock-in and to securely distribute data across multiple providers there are approaches towards IoT cloud federation.

State of the Art & Problem:
In order to federate sensor data across multiple cloud providers, current approaches distribute data from a dedicated gateway. Positioned near to the edge of IoT environments, such gateways provide sufficient resources to process incoming data streams. To enable gateways with advanced distribution functionality this thesis will explore technical approaches to policy- or content-based distribution of sensor data streams across multiple cloud providers.

Research Opportunity:
The thesis in the context of stream processing for IoT infrastructures will include the following:
• Evaluate and select methods for policy- or content-based routing
• Develop a middleware component for IoT gateways which implements the routing
• Evaluate your solution for two scenarios.

Skills: Java, Python or Java Script; cloud services; web technologies

Contact: Marco Peise
mp@ise.tu-berlin.de

Our Mission:
Our lectures cover fundamental methods and techniques in the areas of service computing, cloud computing, and enterprise computing. We like to engage students in hands-on building of distributed information systems and to take an interdisciplinary approach to evaluating such systems. Through a close mentoring of students, especially in our seminars, we aim to introduce students to our ongoing research and to excite them to do future studies and research with us.