



Open Thesis (BA)

Inferring system properties from inter-communication times of event-triggered control

<p>Description:</p> <p>In networked control systems, measurements and control actions are sent via a communication network between sensor, controller and actuator. Thereby, the controller can be outsourced to a powerful external cloud computing service. Besides all the advantages of this flexible approach, there might be privacy concerns. If the measurements, the control actions or the control policy are confidential, encrypted control can be used to compute control actions in the cloud without revealing any information about the data to the cloud provider.</p> <p>To reduce the amount of communication in the network, event-triggered control schemes were developed. There, measurements are only sent to the controller if certain triggering conditions are met. In combination, encrypted event-triggered networked control is communication-efficient and data privacy is maintained. However, the communication events can be observed.</p> <p>The goal of this thesis is to investigate which system properties can be determined if the transmitted data is hidden but the communication pattern is known.</p> <p>Prerequisites:</p> <ul style="list-style-type: none">• Course <i>Einführung in die Regelungstechnik</i>• Interest in systems theory, having fun with theoretical work	<p>Supervisors:</p> <p>Sebastian Schlor, Anne Koch, Johannes Köhler</p> <p>Area:</p> <p>Networked Control Encrypted Control</p> <p>Properties:</p> <p>Type: BA</p> <p>40% literature 50% theory 10% simulation</p> <p>Beginning:</p> <p>Any time, please approach Sebastian Schlor via email.</p>
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Weitere Informationen: www.ist.uni-stuttgart.de/lehre/bama

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