



Der Vorsitzende des Promotionsausschusses

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## EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Herrn M.Sc. Alexander Blatt**  
Sprach- und Signalverarbeitung  
(Prof. Dr. Dietrich Klakow)

am

**Dienstag, 14. Oktober 2025, 16:00 Uhr s.t.**

per Videokonferenz: Link für MS Teams: <https://msteams.link/A786>

Raum für die Prüfung: Gebäude C7.4, Konferenzraum 1.17

### Thema der Dissertation:

### **Analyzing and overcoming low-resource and domain specific problems in the air-traffic control speech processing pipeline**

Air-traffic control is a highly demanding task and its erroneous conduction directly correlates with incidents and accidents. Machine learning based assistant solutions for air-traffic controllers, especially incorporating automatic speech recognition and natural language processing, are therefore subjects of research. This thesis investigates different parts of an air-traffic control speech processing pipeline, like stress detection, privacy, automatic speech recognition and natural language processing, to increase the robustness and explainability of the pipeline with the goal to develop better support systems. I analyze and demonstrate how to overcome domain specific problems, like high noise levels, the sparsity of available data and the domain specific vocabulary.

Saarbrücken, 30. September 2025

  
Prof. Dr.-Ing. Georg Frey