

Patrick Scheffe, M. Sc. RWTH

Member of the [Cyber-physical Mobility Group](#)

Contact



Research Assistant

Tel. +49 241 80 21184

Fax +49 241 80 22150

Email: [scheffe\[at\]embedded\[dot\]rwth-aachen\[dot\]de](mailto:scheffe@embedded.rwth-aachen.de)

Address: Ahornstr. 55, 52074 Aachen, Germany

Room: 2224

Research

My research focus lies on networked control systems in the context of the [GROKO-Plan](#) project. New approaches in networked control can be evaluated in the [CPM Lab](#) experimentally. The [videos on YouTube](#) give an impression of the CPM Lab and research done by members of the [CPM Group](#).

Theses

Open topics in my [research area](#) usually exist. If you are interested in my research, we can meet up or you can contact me via email in order to draft a suitable thesis topic.

Students worked on the following topics under my supervision:

- Receding horizon control using graph search for networked vehicle trajectory planning
 - Distributed trajectory planning for networked vehicles using graphs
- Path tracking control of model-scale vehicles
- Sensor fusion for indoor position estimation of model-scale vehicles
- Combining graphs for maneuver-based motion planning of networked vehicles
- Analysis of existing autonomous and networked model-scale vehicles

Teaching

| Semester | Titel | Art |
|-----------|---|-----|
| 20 Winter | Regelung und Wahrnehmung in vernetzten und automatisierten Fahrzeugen | V |
| | Seminar: Ausgesuchte Themen zur Eingebetteten Software | S |
| | Proseminar: Grundlagen eingebetteter Systeme | S |
| 20 Summer | Seminar: Ausgesuchte Themen zur Eingebetteten Software | S |
| | Proseminar: Grundlagen eingebetteter Systeme | S |
| 19 Winter | Regelung und Wahrnehmung in vernetzten und automatisierten Fahrzeugen | V |
| | Seminar: Ausgesuchte Themen zur Eingebetteten Software | S |
| | Proseminar: Grundlagen eingebetteter Systeme | S |
| 19 Summer | Proseminar: Grundlagen eingebetteter Systeme | S |

Publications

[KSB+19]

[PDFBIB](#)

Kloock, M. M., Scheffe, P., Botz, L., Maczijewski, J., Alrifaae, B., and Kowalewski, S., "Networked Model Predictive Vehicle Race Control", in *Proc. The 2019 IEEE Intelligent Transportation Systems Conference - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE, IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation Systems Society, Piscataway, NJ, 2019, IEEE*, pp. 1552-1557.

Networked Model Predictive Vehicle Race Control

Bibtex entry :

```
@inproceedings { KSB+19,
  author = { Kloock, Maximilian Martin and Scheffe, Patrick and Botz,
    Lukas and Maczijewski, Janis and Alrifaae, Bassam and
    Kowalewski, Stefan },
  title = { Networked Model Predictive Vehicle Race Control },
  booktitle = { The 2019 IEEE Intelligent Transportation Systems
  Conference
    - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE,
    IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation
    Systems Society },
  publisher = { IEEE },
  pages = { 1552-1557 },
  year = { 2019 },
  address = { Piscataway, NJ },
  organization = { 22nd IEEE Intelligent Transportation Systems
  Conference,
    Auckland (New Zealand), 2019-10-27 - 2019-10-30 },
  doi = { 10.1109/ITSC.2019.8917222 },
  typ = { PUB:(DE-HGF)7 },
  reportid = { RWTH-2019-11241 },
  cin = { 122810 / 120000 },
```

```
url = { http://publications.rwth-aachen.de/record/773727 },  
}
```

[KSM+19]

PDFBIB

Kloock, M. M., Scheffe, P., Marquardt, S., Maczijekowski, J., Alrifaae, B., and Kowalewski, S., "Distributed Model Predictive Intersection Control of Multiple Vehicles", in *Proc. The 2019 IEEE Intelligent Transportation Systems Conference - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE, IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation Systems Society*, Piscataway, NJ, 2019, IEEE, p. 8917117, 1735-1740.

Distributed Model Predictive Intersection Control of Multiple Vehicles

Bibtex entry :

```
@inproceedings { KSM+19,  
  author = { Kloock, Maximilian Martin and Scheffe, Patrick and  
    Marquardt, Sascha and Maczijekowski, Janis and Alrifaae,  
    Bassam and Kowalewski, Stefan },  
  title = { Distributed Model Predictive Intersection Control of  
    Multiple Vehicles },  
  booktitle = { The 2019 IEEE Intelligent Transportation Systems  
Conference  
  - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE,  
  IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation  
  Systems Society },  
  publisher = { IEEE },  
  pages = { 8917117, 1735-1740 },  
  year = { 2019 },  
  address = { Piscataway, NJ },  
  organization = { 22nd IEEE Intelligent Transportation Systems  
Conference,  
  Auckland (New Zealand), 2019-10-27 - 2019-10-30 },  
  doi = { 10.1109/ITSC.2019.8917117 },  
  typ = { PUB:(DE-HGF)7 },  
  reportid = { RWTH-2019-11242 },  
  cin = { 122810 / 120000 },  
  url = { http://publications.rwth-aachen.de/record/773728 },  
}
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