

# Georg Friedrich Schuppe

Academic with a Passion for Open Source



gschup



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## WORK

### KTH ROYAL INSTITUTE OF TECHNOLOGY | DOCTORAL STUDENT

Jan 2019 – Current, thesis defense planned in Aug/Sep 2023 | Stockholm, Sweden

- Independently executed a four-year research project regarding provably correct task planning for multi-agent systems from temporal logic specifications.
- Developed novel methods for the computation and communication of logical assumptions between agents, including communication of made assumptions to human actors.
- Contributed to the research community by publishing scientific articles at international academic conferences.
- Collaborated with other doctoral students, professors and postdoctoral researchers to elevate the project and foster interdisciplinary research.

## SELECTED PROJECTS

### GGRS - OPEN SOURCE NETCODE LIBRARY | RUST

<https://github.com/gschup/ggrs>

- GGRS is a netcode library that implements state-of-the-art rollback netcode with applications in e.g. P2P multiplayer games.
- Features a WASM demo app that runs in the browser using WebRTC.
- Also developed separate plugins for popular game frameworks.
- Together, the repositories have been starred over 500 times on Github.
- The library has been downloaded over 15.000 times.
- Used by the successfully funded kickstarter project Fish Folk.

### INTERACTIVE ONLINE USER STUDY | JAVASCRIPT, WASM, HTML, RUST, SQL, DOCKER

<https://github.com/KTH-RPL-Planiacs/human-adviser-study>

- Software stack for the user study of [1].
- Frontend written in Rust, displayed in the browser using WASM. User performance data is sent and stored on a dockerized SQL database backend, composed through a nginx reverse proxy on a self-hosted cloud virtual machine.

## SELECTED PUBLICATIONS

- [1] Georg Friedrich Schuppe, Ilaria Torre, Iolanda Leite, and Jana Tumova. Follow my advice: Assume-guarantee approach to task planning with human in the loop. In Robotics: Science and Systems (RSS), 2023.
- [2] Christian Pek\*, Georg Friedrich Schuppe\*, Francesco Esposito, Jana Tumova, and Danica Kragic. Monitoring robotic tasks using spatio-temporal logics constraints. Under review at Springer: Autonomous Robots, 2023.
- [3] Georg Friedrich Schuppe and Jana Tumova. Decentralized multi-agent strategy synthesis under  $LTL_f$  specifications via exchange of least-limiting advisers. In 2021 International Symposium on Multi-Robot and Multi-Agent Systems (MRS), pages 119–127. IEEE, 2021.
- [4] Georg Friedrich Schuppe and Jana Tumova. Multi-agent strategy synthesis for LTL specifications through assumption composition. In 2020 IEEE 16th International Conference on Automation Science and Engineering (CASE), pages 533–540. IEEE, 2020.

## SKILLS

### PROGRAMMING

Experienced:

Rust • Python •  $\text{\LaTeX}$

Familiar:

C++ • Java • HTML • SQL  
JavaScript • Matlab • WASM

### LIBRARIES/TOOLS

Tensorflow • ROS  
Git • Docker

## EDUCATION

### KTH ROYAL INSTITUTE OF TECHNOLOGY STOCKHOLM, SWEDEN

PHD IN COMPUTER SCIENCE

Jan 2019 - Jul 2023, projected

### LEIBNIZ UNIVERSITY HANNOVER, GERMANY

MASTER'S IN COMPUTER SCIENCE

Oct 2015 - Nov 2018

With Distinction

BACHELOR'S IN COMPUTER SCIENCE

Oct 2011 - Oct 2015

## AWARDS

- 2021: Nominated for Best Student Paper Finalist at IEEE MRS
- 2019: Selected as WASP affiliated PhD student  
WASP is Sweden's largest ever individual research program

## REFERENCES

### Jana Tumova

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KTH Royal Institute of Technology

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### Johan Klokhammer Helsing

Open Source Collaborator

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