Georg Schuppe

Academic with a Passion for Open Source

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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 - ROLLBACK NETCODE LIBRARY | Rust

https://github.com/gschup/ggrs

- GGRS is a netcode library that implements state-of-the-art rollback netcode for P2P multiplayer games, based on the popular GGPO.
- Features a WASM demo app that runs in the browser using WebRTC.
- Also developed an accompanying Bevy plugin.
- Together, the repositories have been starred over 450 times on Github.

INTERACTIVE ONLINE USER STUDY | JavaScript, WASM, HTML, Rust, SQL, Docker

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

- The study focusses on communication of logical assumptions between a computational agent and the human participant [1].
- The interactive game is implemented using Rust and runs in the browser using WASM. User performance data is sent and stored on a SQL database in a docker container, 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. Unter 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 • 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 - Aug 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

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