Sabrina Pochaba

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2013-2018 ●	**Student (University Ulm)** Mathematics & Biology State examination
2018-2021 ●	**Student (University Heidelberg)** Mathematics Master of Science
2021-present ●	**Data Scientist (Salzburg Research) PhD Student (University Salzburg)** Machine Learning in Network communication

Involvement in RL:

- RL for network communications
- Multi-Agent RL
  - Game Theoreticel approaches for Multi-Agent Systems
  - Multi-Agent RL applied to wireless communication
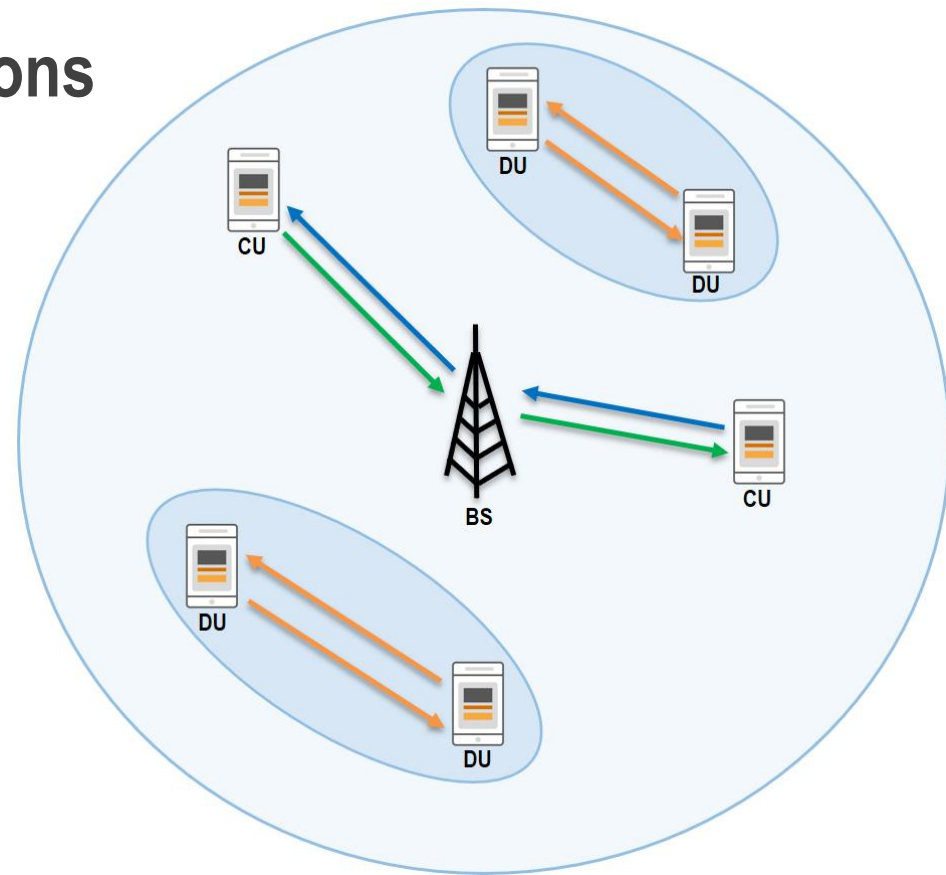
I'm interested in:

- Deep learning algorithms

- Real life applications of RL

- Advanced RL algorithms (Hierarchical RL, Multi-Agent RL, Meta RL, Inverse RL, mix with other algorithms)

- Exciting ML stuff
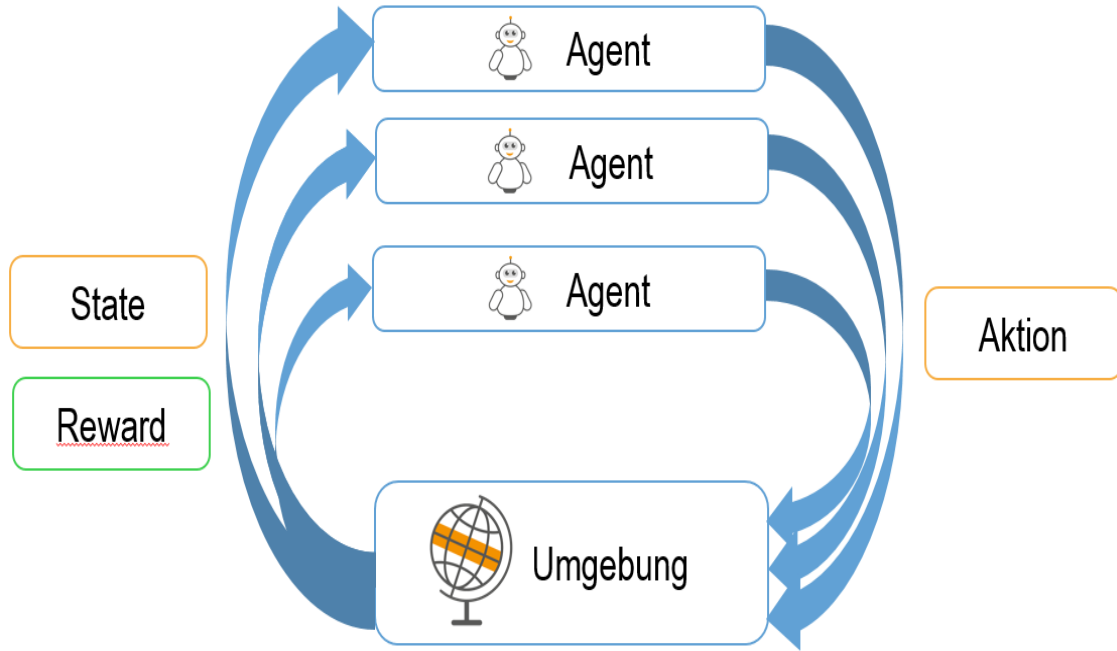
RL for Network Communications

Problem:
Reliable Communication without regulation of BS

Solution:
Multi-Agent RL

- **Environment:** Communcation cell
- **Agents:** Devices

- **Action:** Choice of Frequencyband
- **State:**
  - Own Frequencyband
  - Satisfaction (QoS)
  - Neighbors
  - Frequencyband of Neighbors
- **Reward:** Satisfaction (QoS) of all devices

Multi-Agent RL

Challenges

- Non-Unique Learning Goals

- Non-Stationarity

- Scalability Issue

- Various Information Structures

Game Theory for MARL

- Interaction of many player

- Searching for Equilibria

- NashQ