Master thesis – Reinforcement Learning Based Wireless Network Management

Location: Kista, Stockholm
Preferred starting date: Jan. 2018
Extent: 1 student, 30hp.

About the company
Founded in 1988, Huawei Technologies is one of the fastest growing telecommunications and network solutions providers in the world. At Huawei Technologies, we look for people who share our vision: to enrich life with communication. We are a leading supplier of next generation telecom networks and currently serve 37 of the world’s top 50 operators. Our people are committed to providing innovative products, services and solutions and understand it as their mission to create long-term value and growth potential for our clients.

The Huawei office in Sweden is the leading overseas R&D office in Huawei, and the Wireless Algorithm group at Huawei Sweden drives innovation for the Huawei Wireless RAN product. We work on both advanced receivers and on Radio Resource Management algorithms, for both LTE and 5G.

Thesis description
The optimization of current and future wireless networks’ features takes into account a vast amount of information generated by the network nodes. The data, generated with different granularity, contains a useful information which can be used to learn the behavioral patterns of the network. This will, in turn, enable prediction of the network behavior and, ultimately, its control.

Particularly, this project is concerned with applications of Reinforcement Learning (RL) for efficient management of future generations of wireless networks. It is expected that a student will have a chance to implement the state-of-the-art and novel RL algorithms for our network simulators. This is an exciting opportunity for a well-motivated student, who enjoys programming and simulating machine learning algorithms.

Qualifications
• Master student in Computer Science or equivalent.
• A solid background in area of machine learning.
• Experience in writing and applying machine learning code.
• Good knowledge of C++ and python simulations is essential.

Contact person
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