LETTER OF MOTIVATION FOR THE BLOCK SEMINAR ON "ADVANCED METHODS FOR MULTI-AGENT COMMUNICATION"

Hello, I am Krishnendu Bose and I will be in the third semester of my Cognitive Science Masters in the month of October. I am already a part of the study project on "Emergent Behaviors In A Multi-Agent System With Reinforcement Learning" and will continue with it in the next semester. Within the study project, I am a part of the Reinforcement Learning Research Team and currently working on writing tutorials and comparing the PPO and SAC implementations done by the Reinforcement Learning Coding team for publication in the "Cognitive Science Student Journal" and the "Microcosm Project Website". I might switch to the Language Emergence team in the next semester because I have gotten really interested and curious about the direction they are going and the results they are producing.

I have a lot of experience with writing codes in different programming languages such as Python, MATLAB, C, C++ and different machine learning, deep learning and scientific computing frameworks such as Pytorch, Tensorflow, Numpy, Scipy, Matplotlib, Pandas etc. I have done a lot of courses and implemented many projects using the above mentioned programming languages and frameworks during and after my bachelors and also during my masters here at Osnabruck University. I also have a background in ML, DL, RL and NLP and experience with researching and writing different pieces of work such as book chapters, research papers, journal articles and term papers.

I think this block seminar will be really useful and important for the EBIMAS study project members to learn about the intricate details and different aspects of emergent multi-agent communication and language emergence from experts who are already working in this field and within the Microcosm project. At present there aren't a lot of courses, books or other useful materials that explicitly teaches the key concepts and all the different aspects of MARL emergent communication and language emergence. I am really motivated to participate in this block seminar because I want to go deeper within MARL emergent communication and want to solidify my knowledge by participating in the different workshops and implementing the project at the end of the seminar. This will also help me to participate more efficiently in the study project and I will be able to apply the practical knowledge and intuitions gained from the seminar towards newer directions and maybe even develop novel approaches and apply them.