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OPTIMISATION OF COMMUNICATIONS CONNECTIVITY USING AI

Abstract

This is a placeholder abstract that will be updated following the Frontier Development Lab research sprint which takes place in June-August 2019. The Frontier Development Lab (FDL) is an AI and space research accelerator that runs in partnership with NASA in the US, and with ESA in Europe. At least one of the interdisciplinary teams of PhD and post-doctoral researchers will be focussing on "Connecting the Planet" - investigating whether AI techniques could be developed to optimise communications satellites (or satellite swarms) to improve efficiency of coverage and help bring the next billion people online.

During the research sprint, small teams work intensely over a period of eight weeks, supported by world-class mentors and industry partners as well as the space agencies - with remarkable results.

In previous years teams have worked on improving disaster response times, prediction of GPS scintillation, space-weather forecasting and asteroid shape-modelling, but this is the first time we have had a challenge dedicated to communications. We are working closely with the ESA future telecommunications office to define the challenge question for the team, but it will certainly fall within the scope of this session.

The paper will detail the challenge area that the team worked on, the data-sets and techniques used, and results gained from their prototypes. This will all be communicated within the context of using AI and Space for the benefit of humanity, and will share key learnings, challenges and solutions developed/encountered during the development process.

For more information please feel free to contact Kate@frontierdevelopmentlab.org