



Press Release

## Networks for the Future

European Research Council awards ERC Starting Grant worth 1.148 million euros to Fabian Kuhn

How will it be possible to design computer networks that are efficient and reliable enough to cope with the increasing amount of users, data, and innovations the future will bring? This is one of the central questions Prof. Dr. **Fabian Kuhn**, holder of the Chair of Algorithms and Complexity at the Department of Computer Science of the University of Freiburg, aims to explore in his project "Algorithms and Complexity of Highly Decentralized Computations," which has been selected to receive a Starting Grant for pioneering projects from the European Research Council (ERC).

It's hard for us to image life anymore without computer networks. We have become used to having access to the internet and therefore to important data at all times. The demand for technological advancements, wireless networks, and more and more innovations, like peer-to-peer computing, cloud computing, and social networks, will make large-scale computer networks even more indispensable and complex in the future.

During the five-year funding period, Kuhn plans to focus primarily on decentralized networks and computer systems from an abstract, theoretical perspective. One of the challenges will lie in finding a design for communication and the distribution of tasks that enables networks to dispense with central control systems, in which each component only needs to keep tabs on a part of the whole. In addition, Kuhn and his team will develop new methods and algorithms to solve fundamental coordination and

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communication problems in networks quickly and with a low consumption of resources.

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The ERC Grant is one of the most prestigious research grants in Europe. The sole selection criteria are the scientific excellence of the applicants and their applications, which are evaluated in a two-stage selection procedure. In the current selection round, the European Research Council received a total of 3329 applications for starting grants in the areas Physical Sciences and Engineering, Life Sciences, and Social Sciences and Humanities.

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The University of Freiburg achieves top positions in all university rankings. Its research, teaching, and continuing education have received prestigious awards in nationwide competitions. Over 22,000 students from 100 nations are enrolled in 186 degree programs. Around 5,000 teachers and administrative employees put in their effort every day – and experience that family friendliness, equal opportunity, and environmental protection are more than just empty phrases here.