The University of Bremen is offering – conditional to the release of budgetary funds -
Two PostDoctoral positions

in the "Parallel Computing for Embedded Sensor Systems" group at the University of Bremen/DLR.

Salary is according to the German Federal pay scale TV-L 13

The group is a collaboration with the DLR (German Aerospace Center), and hence facilities and resources of the DLR may be made available upon request.

In this group, we develop image processing, system identification, and control algorithms for Android phones, with which we intended to control autonomous fractionated systems.

All of the smartphone capabilities, including sensors, wifi, and processing power are used in the control of the system, ideally with no external IMUs involved. In this setting, image processing is to be used to detect the position and orientation of other agents in the system in order to enable coordinated formation flight. Designing system identification and control algorithms for these systems is also another major challenge since Android is not a realtime environment, and hence sensor data can only be gathered asynchronously with significant latencies. While rooting the Android phones would be one option for obtaining realtime measurements, we explore what is possible without such a modification.

The researchers will have funding until October 31, 2017 regardless of the starting date.
Conference attendance is strongly encouraged, and hence funding for 2 international conference is afforded.

Requirements:

The applicants should have a control-theory-related PhD before the intended start date, and the applicant must be fluent in Java, C++, and/or OpenCL. The applicants will develop obstacle avoidance or tractory optimization algorithms which will aid in the coordinated flight of quadcopters in the laboratory. The applicants can work on either control or image processing aspect of obstacle avoidance or tractory optimization, although if the applicant intends to work on the image processing aspect, then OpenCV experience is required. Since the researchers are expected to implement algorithms that can be compiled for an Android device, proficiency in languages such as Python and Matlab, while helpful for prototyping algorithms, are not directly helpful toward the goal of group. Note that English is the working language of the group, and hence a high level of English proficiency is required. German is useful for getting around, but no German knowledge is required for the work.

As the University of Bremen intends to increase the proportion of female employees in science, women are particularly encouraged to apply. In case of equal personal aptitudes and qualification, disabled persons will be given priority. Applicants with a migration background are welcome.
Please send your application with reference number A192/16 not later than 25th August 2016 to:

Prof. Matthew Hölzel
Universität Bremen
Fachbereich 3
Postfach 33 04 40
28334 Bremen
or by email: hoelzel@uni-bremen.de