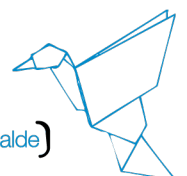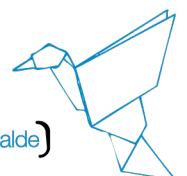# KTU Research Technician in Heuristic Optimization

Job Offer	
Topics:	In the framework of the BCAM "*Maths & Artificial Intelligence*" strategy, a series of projects in this field will be launched in different areas of Applied Mathematics. This project is titled "***Heuristic Optimization for Emergency Healthcare***" and deals with:
	The analysis of the ambulances service in order to identify its strengths, weaknesses, opportunities, and threats related to its attention planning management. The allocation of a limited set of resources (ambulances) to a large and random set of services (attention) is obviously a problem that requires mathematical and computational techniques for its analysis and optimization. Some of the more frequent problems are the system saturation, optimal allocation decisions, efficient localization of the bases, optimal transport routes, among others. Since they are, in general, NP-hard problems, heuristic algorithms have been developed for solving them in a reasonable time.
PI in charge:	Gloria Pérez Sainz de Rozas
Salary and conditions:	**The gross annual salary of the Fellowship will be 18.000 - 26.000€.** It will then be on your own responsibility to make your yearly income declaration at the Bizkaia Treasury Agency. There is a moving allowance for those researchers that come from a research institution outside the Basque Country from EUR 500 to EUR 1.000 gross. *Free access to the Public Health System in Spain is provided to all employees.*
No Positions offered:	**#1**
Contract and offer:	**14 months (starting in November 2019)**
Deadline:	**September 13th 2019, 14:00 CET (UTC+1)**
How to apply:	Applications must be submitted on-line at: http://www.bcamath.org/en/research/job

Scientific Profile Requested

Requirements:	- Promising young researchers. - Applicants must have their degree preferable in Mathematics, Computer Science or related fields. - Master's degree with heuristics, machine learning, statistics and operations research subjects will be highly appreciated. - Fluency in spoken and written Spanish will be appreciated.
Skills and track-record:	- Good interpersonal skills. - A proven track record in quality research, as evidenced by research publications in top scientific journals and conferences. - Demonstrated ability to work independently and as part of a collaborative research team. - Ability to present and publish research outcomes in spoken (talks) and written (papers) form. - Ability to effectively communicate and present research ideas to researchers and stakeholders with different backgrounds. - Fluency in spoken and written English.
Scientific Profile:	The preferred candidate will have: - Strong programming skills (C, Python or similar). - Strong background in mathematical optimization and computing. - Background in high-level modeling systems for mathematical optimization (e.g.: CPLEX Optimization Studio or GAMS) and optimization solvers such as Gurobi or CPLEX. - Background in data base management and data visualization. - Knowledge in exact and heuristic optimization techniques, location and routing problems, clustering. - Research experience in optimization and applied statistics in interdisciplinary applications (e.g.: Health, Energy).

Application and Selection Process

Formal Requirements:	The selected candidate must have applied before the application deadline online at the webpage http://www.bcamath.org/en/research/job

	The candidates that do not fulfil the mandatory requirements will not be evaluated with respect to their scientific profile.
Application:	Required documents: ■ CV ■ Letter of interest ■ 2 recommendation letters (desirable)
Evaluation:	Based on the provided application documents of each candidate, the evaluation committee will evaluate qualitatively: the adaption of the previous training and career to the profile offered, the recommendation letters, the main results achieved (papers, proceedings, etc.), the statement of past and proposed future research and other merits; taking in account the alignment of these items to the topic offered.

Incorporation:	**November 2019 or as soon as possible thereafter**