



Universidade do Minho

Open Call for PhD Candidates for 2 PhD Grants

Context of this call:

Within the context of a recently approved research project, we will open soon 2 PhD Grants. This is an informal open call that we are launching in order to **collect a pool of potential candidates**, such that we can speedup the formal call once it is officially open.

Each grant position is funded with the standard FCT Portuguese reference values (980 euros per month, see Annex I from <http://www.fct.pt/apoios/bolsas/docs/RegulationFellowships.pdf>), with a duration that can go up to 36 months (3 years).

Each grant theme and candidate profile is detailed in the next pages. For any of the PhD Grants, there is a **strong requirement** that candidates should be already enrolled, or should commit to enroll (as soon as possible) if their application is accepted, in one of the following doctoral programs:

- Information Systems and Technologies Doctorate Program (PDTSI, <http://pdti.dsi.uminho.pt/?lang=en>);
- MAP Doctoral Program in Computer Science (MAP-i, <http://mapi.map.edu.pt/>); or
- Doctoral Program on Informatics (PDINF, <http://pdinf.di.uminho.pt/>).

The supervisors of both grants will be: **Paulo Cortez** (Associate Professor, Department of Information Systems, University of Minho, <http://www3.dsi.uminho.pt/pcortez>); and **Rui Mendes** (Assistant Professor, Department of Informatics, University of Minho, <http://ceb.uminho.pt/People/Details/26a1f0e5-f04e-45e5-9edb-f725781da1bc>).

Any interested candidate should send, as soon as possible, their *Curriculum Vitae* (CV) in pdf, where they detail their professional and technical skills, including: University Degree (including the final average score, individual scores for curricular units related with the grant subjects); Master of Science degree (if applicable, final average score, individual scores for curricular units related with the grant subjects); Experience in Research (participation in scientific projects, publications, etc.); and Technology and Language Skills (level of knowledge, experience with programming or data analysis tools and languages). The CV should be sent by email to pcortez@dsi.uminho.pt and rcm@di.uminho.pt, with an indication of which is the target grant (#1, #2 or both).

PhD Grant #1 “A Business Intelligence Approach for Mobile Performance Marketing”

This project involves the area of Mobile Performance Marketing (e.g. smartphones, tablets) and advertising of mobile products with a subscription business model. It is an advertising growing area due to the evolution of the Internet and mobile market and it corresponds to a marketing business where the advertiser only pays when there are acquired customers and measurable results (e.g. Cost Per Acquisition - CPA).

In this PhD, a Business Intelligence approach (with usage of Intelligent Data Analysis technologies, such as Data Science, Data Mining, Decision Support Systems) will be researched for the prediction of mobile subscription marketing campaigns. The aim is to predict what is the best mobile product to be shown to the end user.

Desired Candidate Profile (the more of these elements, the better):

- Bachelor and Master of Science degree in areas related with Information Systems Technology or Computer Science, final average score higher than 70% (14 *valores*).
 - Currently enrolled in any PhD program mentioned in the first page. It would favor the application if the candidate already finished all or most of the first year of the PhD degree (curricular units of the program).
 - High knowledge/experience in the areas of: Machine Learning, Data Mining, Decision Support Systems, Business Intelligence or Artificial Intelligence Applications.
 - High knowledge/experience in Information Technology: programming languages (e.g., C or Java), R or Python.
 - Previous experience in Research.
 - Good knowledge in Digital and Performance Marketing.
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PhD Grant #2 “A Modern Optimization Approach for Mobile Performance Marketing”

This project involves the area of Mobile Performance Marketing (e.g. smartphones, tablets) and advertising of mobile products with a subscription business model. It is an advertising growing area due to the evolution of the Internet and mobile market and it corresponds to a marketing business where the advertiser only pays when there are acquired customers and measurable results (e.g. Cost Per Acquisition - CPA).

In this PhD, a Modern Optimization approach (with usage of metaheuristics, such as Simulated Annealing, Particle Swarm Optimization or Evolutionary Computation) will be researched in order to optimize the prediction of mobile subscription marketing campaigns. This optimization will consider several aspects, such as optimizing the interests of the stakeholders (the mobile performance marketer, advertisers, webmasters and creators of mobile content and also users) and computational efficiency (good usage of computational resources).

Desired Candidate Profile (the more of these elements, the better):

- Bachelor and Master of Science degree in areas related with Information Systems Technology or Computer Science, final average score higher than 70% (14 *valores*).
 - Currently enrolled in any PhD program mentioned in the first page. It would favor the application if the candidate already finished all or most of the first year of the PhD degree (curricular units of the program).
 - High knowledge/experience in the areas of: Search, Modern Optimization, Evolutionary Computation, Machine Learning or Neural Networks.
 - High knowledge/experience in Information Technology: programming languages (e.g., C or Java), R or Python.
 - Previous experience in Research.
 - Good knowledge in Operations Research, including Numeric, Combinatorial or Multi-objective Optimization.
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