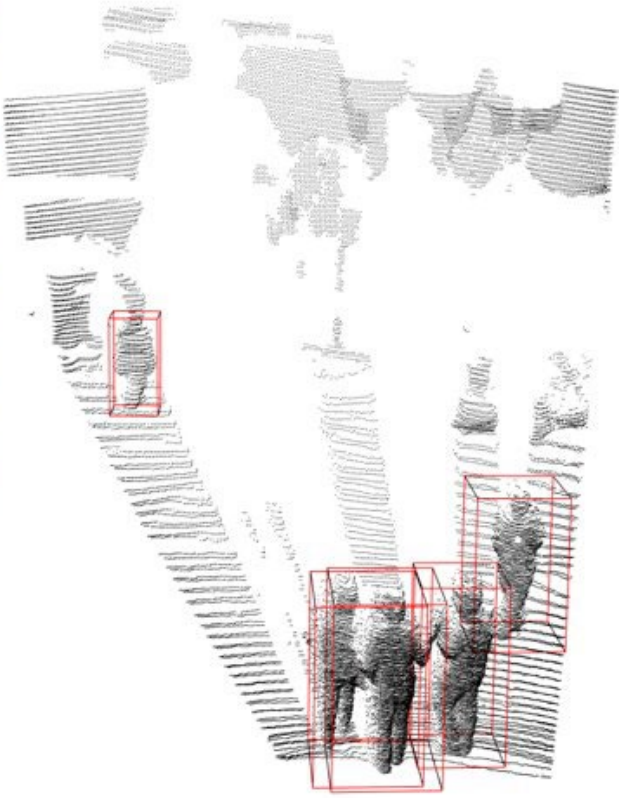
Centre de Desenvolupament de Sensors,Instrumentació i Sistemes
UNIVERSITAT POLITÈCNICA DE CATALUNYA

PhD Candidate on Lidar Imaging and 3D computer vision

The CD6, the Optical Engineering Research Group at the Technical University of Catalonia, has currently an open position for a PhD candidate on lidar imaging and 3D computer vision.



Job Description

The candidate will develop her/his Doctoral Thesis within the Optical Engineering Research Group at CD6, specifically in the Optical Metrology team, under the direction of Prof. Santiago Royo (https://www.linkedin.com/in/santiago-royo-a91395a/) . She/he will undertake a Doctoral Thesis in the field of lidar systems and 3D+2D data fusion, an area where CD6 currently has multiple international collaborations and is developing various projects funded by the European community.

Operationally, they will integrate into the research group in a shared room with technicians, researchers, and other doctoral students, where they will find specialists in different disciplines (optics, mechanics, electronics, software) with whom they will coordinate the project's development. CD6 has its own prototyping facilities, including two Prototype Workshops for large systems, a Mechanical Workshop, and an Electronics Workshop, coordinated by specialists in Optomechanics, where various subsystems for the doctoral thesis can be developed and modified quickly as needed.

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The candidate will receive a four-year full-time scholarship, with an annual salary of €19,479.04 in the first year and €24,348.80 in the second to fourth years. They will also have access to materials and equipment for developing their Doctoral Thesis through the project that funds the scholarship. During their Doctoral Thesis, they will be trained in various disciplines related to Optical Engineering, both hardware and software. Currently, it is expected that these disciplines will include Optomechanical Design, Electronics, the setup and handling of complex optical instrumentation, software model development, and data processing, particularly in Computer Vision and Deep Learning algorithms applied to pedestrian perception.

Candidate Profile

Technical Requirements

Despite the ideal candidate should cover all the topics, partial fulfilment of requirements may be accepted.

- *Degree:* Master and/or Bachelor in Physics or Engineering.
  Preferably a master's in Photonics and a degree in Physics or Engineering Physics is expected, but other reasonably equivalent qualifications can be considered.
- Languages: Spoken and written English at the level of meetings and technical reports.
  Spanish and Catalan will be valued.
- Programming: Advanced Matlab and Python.
  C++, OpenGL, and equivalent languages will be valued.
- Experience in Optical Laboratory:
  Particularly valued experience in complex optical laboratory setups and instrumentation, and optical metrology for the characterization of optical systems (interferometry, deflectometry). Practical knowledge in setting up active optical systems.
- Experience in Lidar Systems and Data Fusion: Particularly valued experience in developing radiometric models, processing point clouds, data fusion, image system calibration, etc.

Personal Requirements

- Able to search for resources, both scientific and technical.
- Self-motivated, objective-driven, and capable of working independently within a multidisciplinary team.
- High self-expectation, organization, and orientation towards excellence.
- Experience in technical/scientific report writing.
- Experience in applied research, ideally in business R&D projects.
- Interest in developing solutions applied to real problems.

CD6 is an equal opportunity employer and will not discriminate against any candidate for reasons of gender, race, nationality, or religion.

Candidates should send his CV (detailed, not a 1 pager!) and a letter of intentions so santiago.royo@upc.edu, preferable before. October 27th.

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