

PhD candidate in 3D Computer Vision

Faculty of Science – Informatics Institute

Publication date	Closing date
7 February 2017	15 March 2017
Level of education	Hours
Master's degree	38 hours per week
Salary indication	Vacancy number
€2,191 to €2,801 gross per month	17-046

The [Informatics Institute](#) is one of the large research institutes within the [Faculty of Science](#), with a focus on complex information systems divided in two broad themes: 'Computational Systems' and 'Intelligent Systems'. The institute has a prominent international standing and is active in a dynamic scientific area, with a strong innovative character and an extensive portfolio of externally funded projects. Within the intelligent systems theme, world class research groups directly involved in computer vision and deep learning are CV (computer vision, led by Prof. T. Gevers), ISIS (computer vision and multimedia led by Prof. A. Smeulders), and AMLAB (machine learning led by Prof. M. Welling).

Project description

The Informatics Institute at the University of Amsterdam invites applications for a PhD position for four years, on the topic of 3D Computer Vision. The candidate will be supervised by Thomas Mensink and Arnold Smeulders.

The ultimate goal of this position is to enable 3D reasoning based on a single 2D photo. We aim to estimate the rough 3D geometry by separating the layout of objects in the scene from the global scene layout. While objects have an almost infinite number of possible configurations, the global scene layout is relatively more stable and can be cast in about 20 scene geometry types. The first research question is to define these different types and infer them from a single image alone using deep learning. Next, we focus on the local ordering of objects, to infer out-of-context objects and to describe an image based on this 3D ordering.

Context

The research position is part of a collaboration between SRI Stanford (USA), IDIAP (Martigny, Swiss) and the University of Amsterdam to automatically infer inconsistencies among the different modalities of a video. To this end the 3D geometry delivers an important cue to match the visual and audio channel. Within the collaboration the University of Amsterdam focusses on the visual scene analysis.

Tasks

- Conduct 3D computer vision research;
- publish in top tier conferences and journals in relevant areas;
- provide teaching assistance (10%);
- complete a PhD thesis.

Requirements

The PhD candidate:

- has a master's degree in Artificial Intelligence, Computer Science, or related field;
- is highly motivated;
- has excellent programming skills (e.g., Matlab, Python);
- has solid mathematics foundations, especially statistics, calculus and linear algebra;
- is fluent in English, both written and spoken;

Proven experience with computer vision / machine learning is a big plus.

Further information

Informal inquiries may be obtained from:

- [Dr. Thomas Mensink](#)

Appointment

The temporary appointment will be full-time (38 hours a week) for a period of four years (initial employment is 18 months). Periodic evaluations will be held after 9 and 14 months, and upon positive evaluation, the appointment will be extended to a total of 48 months. The appointment must lead to a dissertation (PhD thesis). An educational plan that includes attendance of courses, summer and/or winter schools, and national and international meetings will be drafted for the PhD candidate. The PhD candidate is also expected to assist in teaching of undergraduate students.

The salary is in accordance with the university regulations for academic personnel. The salary will range from €2,191 (first year) up to a maximum of €2,801 (last year) before tax per month (scale P) based on a full-time appointment. There are also secondary benefits, such as 8% holiday allowance per year and the end of year allowance of 8.3%. The [Collective Labour Agreement for Dutch Universities](#) is applicable.

Some of the things we have to offer:

- competitive pay and excellent benefits;
- very friendly, interactive and international working environment;
- a new building located near the city center (20 minutes by bicycle) of one of Europe's most beautiful and lively cities;
- access to high-end computing facilities (e.g., cluster with 4,000+ cores).

Job application

Applications must include:

- a cover letter, including a statement of your research interests and a motivation for why you are applying for this position (at most 2 pages);
- a curriculum vitae, (max 3 pages);
- a link to your Master's thesis (when available); or to another English writing sample available online (such as a publication or term paper);
- a complete record of Master courses (including grades);
- the names and contact addresses of at least two or (at most) three academic references.

All these should be grouped in one PDF attachment.

Applications may only be submitted by electronic mail by sending your application to application-science@uva.nl. To process your application immediately, please quote vacancy number 17-046 and the position and the project you are applying for in the subject-line.

The selection process will consist of multiple rounds, during which (selected) candidates may also be asked to complete a programming challenge.

The selection process commences immediately and continues until a suitable candidate is found.

The committee does not guarantee that late or incomplete applications will be considered. You may submit your applications until 15 March 2017.

No agencies please

Apply now

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