

Brief Characteristics of an Applicant in Habilitation Proceedings

at CTU in Prague

Applicant: Georgios Tolias, Ph.D.

A) Pedagogical activities

1. The number of Ph.D. students for whom the applicant was appointed supervisor or co-supervisor and who successfully defended their Ph.D. theses:

1 (Arun Mukandan 2016-2020, co-supervisor together with Prof. Ondřej Chum)

2. The number of defended master/bachelor theses supervised by the applicant:

7 Master Theses and 2 Bachelor Theses

3. Applicant's most significant achievement in the field of teaching:

The "Reading group in Pattern Recognition and Computer Vision" has become a well-attended doctoral course where around 20 students are enrolled per semester. The course is now organized during both the winter and summer semesters to accommodate all interested students. It is additionally regularly attended by other researchers from the faculty; each meeting is typically attended by 25-35 people.

4. Assessment of the applicant in the student Anketa questionnaire in the last 4 semesters:

There is no response to the teaching activities entered in the students' Anketa questionnaire.

B) Scientific or creative activities

1. Three significant original outcomes of scientific or creative activity or arch. or art. realizations:

- A) Paper published at ICLR 2016 for image retrieval and object localization based on deep networks. It is cited more than 800 times according to google scholar.

Particular object retrieval with integral max-pooling of CNN activations. G Tolias, R Sivic, H Jégou. International Conference on Learning Representations (ICLR), 2016

- B) Paper published at PAMI 2019 for image retrieval with deep networks. It is cited more than 550 times according to google scholar, while the conference version of this work is cited 550 times too. The public implementation on GitHub has 170 and 1,1000 stars for the MATLAB and Python packages, respectively. It has become the standard implementation for this task. Our

method is used by many participants in related research competitions on Kaggle. This paper got the Rector's award for prestigious publication at CTU.

Fine-tuning CNN Image Retrieval with No Human Annotation. F Radenović, G Tolias, O Chum. IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI). 2019

- C) Paper published at CVPR 2019 for semi-supervised learning with deep networks where we bridge classical and deep approaches for this task. This work is already cited more than 280 times according to google scholar. The public implementation has more than 70 stars from GitHub users.

Label propagation for deep semi-supervised learning. A Iscen, G Tolias, Y Avrithis, O Chum. Computer Vision and Pattern Recognition (CVPR), 2019.

2. H-index without self-citations: 18 based on the V3S system, Google Scholar 26 (*as of the date of this review*)

3. The number of citations WOS/Scopus/reactions of the arch. work, self-citations not included:

1873 in Web of Science (WOS), 2379 in SCOPUS, Google Scholar 4914 (*as of the date of this review*).

4. Mobility (internships in a workplace abroad – place, duration, and outcomes of the internship):

A) Internship at Inria, Rennes-France for 5 months resulted in papers published at:

- ICCV 2013

- Pattern Recognition 2014

B) Post-doc at Inria, Rennes-France for 16 months resulted in papers published at:

- ECCV 2014

- IEEE Transactions on Image Processing 2015

- CVIU 2015

- ICMR 2015

- IJCV 2016

C) Ph.D. at NTUA, Athens, Greece

5. Two most prominent grant projects of which the applicant was a principal investigator or co-investigator (applicant or co-applicant):

Junior Star GACR (2021-2025), a 5-year grant to create a new research team

6. Example(s) of implementation of applicant's outcomes in practice:

- Funding for 1 Ph.D. student for 4 years by Naver Labs Europe (2021-2024)
- Consultation services for Markify on large-scale trademark identification

7. Most prominent recognition of the community (incl. recognition in an arch. or art. competition):

Best science paper award - honorable mention at BMVC 2017. BMVC is ranked A2 according to the QUALIS conference ranking (<https://www.gov.br/capes/pt-br>).

8. Most prominent community service:

Area Chair for ECCV 2020. ECCV is an A* conference that is ranked 27 among conferences and journals of all fields according to google scholar metrics 2021.

In Prague on 20/10/2022

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signature

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