

Annex 6: Habilitation thesis reader's report

Masaryk University

Faculty MU Faculty of Informatics

Field of Habilitation Informatics

Applicant RNDr. Pavel Matula, Ph.D.

Affiliation Masaryk University, Faculty of Informatics

Habilitation Thesis Image Processing in Fluorescence Microscopy and its Utilization in Cell Biology Experiments

Reader Professor Horst Bischof

Affiliation Technische Universität Graz, Austria

Report Text (as large as the reader deems necessary)

The habilitation thesis of Pavel Matula, "Image Processing in Fluorescence Microscopy and its Utilization in Cell Biology Experiments", deals with processing of microscopic images, in particular fluorescence microscopy of biological experiments. This is a topic of broad interest in biology, but also computer science. The thesis deals with all four aspects of this problem. First, automated image acquisition in order to acquire suitable data. Second, image segmentation in order to segment the object of interest. Third, object tracking for following the cells and sub-cell structures; and fourth applications in cell nucleus research. I will not review the individual parts, since they are papers that have been peer reviewed, but present an overall evaluation of all four parts together.

First, the topic is of broad interest not only for the cell biologist, but also for the computer scientists. Biological experiments produce now so much data such that there is a great need for automated analyses of this data. In fact there is no other way as an automatic analysis. The thesis presents some workflow for fluorescence imaging. It covers all aspects, from the acquisition to the application side. This is highly commended because there are only a few researchers that can cover all these aspects.

Overall this is a broad piece of work with a substantial contribution in all four areas. In all these areas a substantial amount of publications have been achieved. Some of those publications are in well-known and highly rated journals or competitive conferences. Some of the publications are in less known or less competitive conferences. Overall the publication output is very impressive. And Pavel Matula has in all these publications contributed a substantial amount. The work with different co-authors shows that he can work in a team which is also necessary in such an interdisciplinary field.

Overall the habilitation thesis of Pavel Matula is a timely piece of work, with a substantial contribution in the field of computer vision and image processing. Therefore I have no doubt to recommend this thesis.

Reader's questions to answer to defend the habilitation thesis (number of questions is upon reader's consideration)

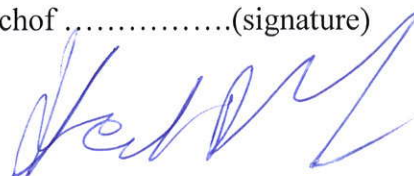
Since I am not at the defense I do not post questions here.

Conclusion

Pavel Matula's habilitation thesis of *Image Processing in Fluorescence Microscopy and its Utilization in Cell Biology Experiments* **does** meet the standard requirements for a habilitation thesis in the field of Informatics.

In Graz on ...10.9.2012.....

Horst Bischof(signature)



Smlouva

podle § 51 občanského zákoníku
Contract in accordance with § 51 of the Czech Civil Code

1. Smluvní strany (Contracting parties)

Objednatel ("Client")

Masarykova univerzita,
Fakulta informatiky
Botanická 68a
602 00 Brno

Zastoupena (*Represented by*): děkanem Fakulty informatiky (*dean of Faculty of Informatics*),
prof. RNDr. Michalem Kozubkem, Ph.D.

(dále jen "Objednatel" / *referred to as "Client"*)

Poskytovatel („Provider“)

Jméno (*Name*): Prof Horst Bischof

Bydliště (*Residence*): ..Am Rosenhof 2/3 A-8063 Eggersdorf b. Graz.

Stát (*Country*):Austria.....

(dále jen "Poskytovatel" / *referred to as "Provider"*)

2. Předmět smlouvy (Contract subject)

Předmětem smlouvy je vypracování oponentského posudku na habilitační práci pana Pavla Matuly.

The subject of this contract is preparation of a review on Mr. Pavel Matula's habilitation thesis.

3. Závazky objednatele (Obligation of "Client")

Objednatel se zavazuje uhradit částku 120 EUR za činnost dle odst. 2.

V případě osobní účasti u obhajoby objednatel dále uhradí částku až do výše 400 EUR na jízdní výdaje a zajištění a uhradí ubytování (max. 3 noci).

Celková částka ve výši120..... EUR bude proplacena bankovním převodem.

The Client shall pay the amount of 120 EUR for the activity specified in paragraph 2.

In the case of personal attendance of the Provider at the defence the Client will pay up to 400 EUR for travel expenses and provide and pay for accommodation (max 3 nights).

The amount of120..... EUR will be paid by bank transfer.

4. Závěrečná ustanovení (Final provisions)

Smluvní vztahy založené touto smlouvou se řídí českým právem, zejména příslušnými ustanoveními občanského zákoníku. K řešení případných sporů jsou příslušné české soudy.

Conditions of the contract are based on the Czech law, specifically on the appropriate paragraphs of the Czech Civil Code. Czech courts are competent to resolve any disputes arising.

Poskytovatel podpisem smlouvy stvrzuje, že není osobou povinnou k dani podle Zákona o dani z přidané hodnoty, nevykonává ekonomickou činnost a má daňový domicil v zemi uvedené v adrese v článku 1 této smlouvy.

By signing this contract, Provider confirms that he/she is not a taxable person by the Value Added Tax Code, shall not perform any economic activity and that his/her permanent address related to the tax duties is in the country stated in the paragraph 1 of this contract.

Smlouva nabývá platnosti a účinnosti dnem podpisu poslední ze smluvních stran.

Contract enters into force following its signature by all contracting parties.

Smlouva je vyhotovena ve dvou výtiscích. Každá smluvní strana obdrží po jednom výtisku.

The contract is printed in two copies, each contracting party shall keep one.

Date ...10.9.2012.....

.....
podpis poskytovatele/Signature of Provider

.....
podpis objednatele/Signature of Client

Poskytovatelům z EU a ze zahraničí bude vyplacena částka v plné výši za předpokladu, že existuje Mezinárodní smlouva o zamezení dvojího zdanění a tato nestanoví jinak. Pokud tato smlouva neexistuje, bude vyplacena částka snížená o srážkovou daň dle §36 odst. 1a) zákona o dani z příjmu.

Provider from EU and abroad will be paid the full amount under the condition that an International Agreement on the Prevention of Double Taxation exists, and does not stipulate otherwise. Should such an agreement not exit, an amount reduced by tax according to Article 36, para 1a) of the law on income tax will be paid

Payment information

| | | |
|--|---------------------------|---|
| 1. Beneficiary | owner of the bank account | full address |
| | Horst Bischof | Am Rosenhof 2/3 A-8063 Eggersdorf b. Graz Austria |
| 2. Beneficiary's bank | name of the bank | full address |
| | Steiermärkische | Hauptplatz A-8820 Neumarkt Austria |
| 3. Account No | 15801504711 | |
| 4. IBAN (only in EU) | AT432081515801504711 | |
| 5. SWIFT (or BIC) | STSPAT2GXXX | |
| 6. Details of payment (if you require this) | | |

In Graz

Date ...10.9.2012

Signature

