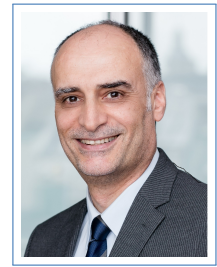


Abdel Aziz Taha

Curriculum Vitae (per Jan. 2020)

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Executive summary

My offer: Founded experience in research and software engineering as well as excellent skills in management:

- Ph.D. degree with distinction in computer science (nomination for the GI best dissertation 2015).
- More than 7 years of research in data analysis in academical as well as industrial clients
- First author of publications in high impact journals and conferences.
- 12 years experience in various software development projects ranging from low-level, embedded, and real-time systems to application software, spanning the full software development life-cycle.
- 3 years experience in electrical engineering and quality insurance in a notable industrial company.

My objective: Utilizing, unfolding, and expanding my academic and industrial experience in a leading company or institution.

Ph.D. Dissertation

Title *Addressing metric challenges: Bias and Selection - Efficient Computation - Hubness Explanation and Estimation*

Description My dissertation provides solutions for problems related to data analysis under extreme conditions, e.g. very high dimensionalities and/or huge data size. In particular, it solves problems related to deficit in system accuracy as a result of metric biases, metric sensitivities and the curse of dimensionality. Furthermore, it provides optimization methods for efficient data measurement. My dissertation has been nominated for the best dissertation award 2015 of the GI (Gesellschaft für Informatik). For more Information on my research, please see [my publication list here](#)

Research ad development

2017–present **Senior Researcher**, *Research Studios Austria (RSA)*, 1090 Vienna, Studio Data Sience (DSc).

Within a team in the Data Science Studio ([more about RSA DSc](#)), I have been conducting research in R&D projects in the field Machine Learning. Main focus is on data analysis and Big Data. Projects involve among others genomics and medical diagnostics, fraud detection, industry automation and anomaly detection/prediction as well as large scale data marketing. My experience in data analysis spans all areas beginning from problem analysis at business level to experimental environment including data aggregation of complex data using Hadoop/sparc/Hive framework, data pre-processing, model selection and meta learning, model building and tuning as well as evaluation, interpretation and drawing conclusions and decision at business level.

2013–2017 **Researcher**, *Vienna University of Technology*, 1040 Vienna, Institute of Software Technologies and Interactive Systems.

Along with my PhD study until moving to RSA in 2017, I had been conducting research in various research projects in the field of machine learning and data analysis. These projects were mainly focusing on medical imaging as well as information retrieval and text analysis.

Teaching

2016–present **Lecturer**, *Vienna University of Technology*, 1040 Vienna.

Along with my research, I am regularly involved in teaching activities. Currently I am teaching computer science lectures in the topic Self Organizing Systems.

Engineering

2004–2015 **SW project manager**, *Lechner ZT GmbH*, 1070 Vienna, (www.hlechner.at).

Lechner ZT GmbH is a company specialized in controlling of huge and complex construction projects. To master this complex task, a tailored project management software called PMTools (www.pmtools.eu), has been developed, where I had a central role in defining the core architecture and leading the development of each module. PMTools includes modules for managing projects, documents, agendas as well for cost planning and cost controlling.

2002–2003 **Software developer**, *Kittenberger Embedded Systems*, 1200 Vienna.

Design and implementation of a real-time CAN BUS interface based on embedded micro-processor using C/C++ and assembly. This CAN BUS was included as a part of a control unit that can remotely operate the ARRI digital movie cameras (www.arri.com).

2000–2002 **Software developer**, *Siemens PSE*, 1100 Vienna.

Developing an embedded software module (microprocessors, C++, assembly) to be used as a simulation stub for testing the UMTS mobile network as a novel technology at that time.

1997–2000 **Electrical Engineer**, *Philips, Video Production*, 1230 Vienna.

In a highly modern and fully automatic industrial production process, my roles were ensuring optimal production flow and quality insurance.

Education

2012–2015 **Ph.D. (Doctoral Program in Technical Science) with distinction.**, *Vienna University of Technology*, Vienna, Focus on data science. See Dissertation above.

2006–2007 **Master in Computer Science**, *Vienna University of Technology*, Vienna / Austria. Focus on computer science management.

2002–2005 **Bachelor in Computer Science**, *Vienna University of Technology*, Vienna/Austria. Focus on technical computer science.

1992–1996 **Electrical engineering**, *Berufspädagogisches Institut, HTL*, Mödling / Austria. High school for maintenance engineering in the electrical field.

Skills

- | | |
|------------|---|
| Research | R&D project coordination; Machine learning; Data mining; Statistical analysis and hypothesis testing; Big Data; Deep Learning. Various research frameworks (R; Python; Matlab; GATE interface; Spark/Hive); Scientific Writing. |
| Management | Software project coordination; Team leadership; Excellent communication skills |

Engineering SW development life cycle; Problem solving; Requirement gathering; Design patterns; Real time Paradigm; Web Engineering;

Programming Web Development/Spring Framework; Various programming languages (JAVA; C/C++; Python; R; LISP; PHP); Database Technologies (SQL; PL-SQL; ORACLE; Scala; Spark/Hive; UML);

Languages

German Near native
English Very good
Arabic Mother language

Additional Personal Information

First name Abdel Aziz
Surname TAHA
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Family status Married / 3 children
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Publications

- 2020 Adam Hilbert, Vince I Madai, Ela M Akay, Orhun U Aydin, Jonas Behland, Jan Sobesky, Ivana Galinovic, Ahmed A Khalil, Abdel A Taha, Jens Wümlrfel, Petr Dusek, Thoralf Niendorf, Jochen B Fiebach, Dietmar Frey, and Michelle Livne. BRAVE-NET: Fully automated arterial brain vessel segmentation in patients with cerebrovascular disease. *medRxiv*, 2020.
- 2019 Michelle Livne, Jana Rieger, Orhun Utku Aydin, Abdel Aziz Taha, Ela Marie Akay, Tabea Kossen, Jan Sobesky, John D. Kelleher, Kristian Hildebrand, Dietmar Frey, and Vince I. Madai. A u-net deep learning framework for high performance vessel segmentation in patients with cerebrovascular disease. *Frontiers in Neuroscience*, 13:97, 2019.
- 2018 Lena Maier-Hein, Matthias Eisenmann, Annika Reinke, Sinan Onogur, Marko Stankovic, Patrick Scholz, Tal Arbel, Hrvoje Bogunovic, Andrew P. Bradley, Aaron Carass, Carolin Feldmann, Alejandro F. Frangi, Peter M. Full, Bram van Ginneken, Allan Hanbury, Katrin Honauer, Michal Kozubek, Bennett A. Landman, Keno März, Oskar Maier, Klaus H. Maier-Hein, Bjoern H. Menze, Henning Müller, Peter F. Neher, Wiro Niessen, Nasir M. Rajpoot, Gregory C. Sharp, Korsuk Sirinukunwattana, Stefanie Speidel, Christian Stock, Danail Stoyanov, Abdel Aziz Taha, Fons van der Sommen, Ching-Wei Wang, Marc-André Weber, Guoyan Zheng, Pierre Jannin, and Annette Kopp-Schneider. Is the winner really the best? A critical analysis of common research practice in biomedical image analysis competitions. *CoRR*, abs/1806.02051, 2018.

- Lena Maier-Hein, Matthias Eisenmann, Annika Reinke, Sinan Onogur, Marko Stankovic, Patrick Scholz, Tal Arbel, Hrvoje Bogunovic, Andrew P. Bradley, Aaron Carass, Carolin Feldmann, Alejandro F. Frangi, Peter M. Full, Bram van Ginneken, Allan Hanbury, Katrin Honauer, Michal Kozubek, Bennett A. Landman, Keno März, Oskar Maier, Klaus Maier-Hein, Bjoern H. Menze, Henning Müller, Peter F. Neher, Wiro Niessen, Nasir Rajpoot, Gregory C. Sharp, Korsuk Sirinukunwattana, Stefanie Speidel, Christian Stock, Danail Stoyanov, Abdel Aziz Taha, Fons van der Sommen, Ching Wei Wang, Marc André Weber, Guoyan Zheng, Pierre Jannin, and Annette Kopp-Schneider. Why rankings of biomedical image analysis competitions should be interpreted with care. *Nature Communications*, 9(1), December 2018.
- 2017 Abdel Aziz Taha, Florina Piroi, Allan Hanbury, Thomas Troppe, Thomas Mutzl, and Haroun Shehata. Message ranking in a factory setting using context and user preference. In *22nd IEEE International Conference on Emerging Technologies and Factory Automation, ETFA 2017, Limassol, Cyprus, September 12-15, 2017*, pages 1–4. IEEE, 2017.
- Abdel Aziz Taha and Allan Hanbury. Evaluation metrics for medical organ segmentation and lesion detection. In *Cloud-Based Benchmarking of Medical Image Analysis*, pages 87–105, Cham, 2017. Springer International Publishing.
- 2016 Oscar Alfonso Jimenez del Toro, Henning Müller, Markus Krenn, Katharina Grünberg, Abdel Aziz Taha, Marianne Winterstein, Ivan Eggel, Antonio Foncubierta-Rodríguez, Orcun Goksel, Andras Jakab, Georgios Kontokotsios, Georg Langs, Bjoern H. Menze, Tomas Salas Fernandez, Roger Schaer, Anna Walleyo, Marc André Weber, Yashin Dicente Cid, Tobias Gass, Mattias P. Heinrich, Fucang Jia, Fredrik Kahl, Razmig Kéchichian, Dominic Mai, Assaf B. Spanier, Graham Vincent, Chunliang Wang, Daniel Wyeth, and Allan Hanbury. Cloud-based evaluation of anatomical structure segmentation and landmark detection algorithms: Visceral anatomy benchmarks. *IEEE Trans. Med. Imaging*, 35(11):2459–2475, 2016.
- 2015 Abdel Aziz Taha and Allan Hanbury. Metrics for evaluating 3d medical image segmentation: analysis, selection, and tool. *BMC Medical Imaging*, 15(1):1–28, 2015.
- Abdel Aziz Taha and Allan Hanbury. An efficient algorithm for calculating the exact Hausdorff distance. *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, 37(11):2153–2163, Nov 2015.
- Abdel Aziz Taha. *Addressing metric challenges: Bias and Selection - Efficient Computation - Hubness Explanation and Estimation*. PhD thesis, Vienna University of Technology, December 2015. http://publik.tuwien.ac.at/files/PubDat_247742.pdf.
- Henning Müller, Katharina Grünberg, Marc Andre Weber, Oscar Alfonso Jimenez del Toro, Orcun Goksel, Björn Menze, Georg Langs, Ivan Eggel, Markus Holzer, Georgios Kontokotsios, Markus Krenn, Roger Schaer, Abdel Aziz Taha, Marianne Winterstein, and Allan Hanbury. Visceral-visual concept extraction challenge in radiology : segmentation challenge : overview, insights and preliminary results. *Proceedings of the 9th European Congress of Radiology (ECR) 2015, (CONFERENCE):1 p.*, 2015.

Katharina Gruenberg, Marc André Weber, Oscar Alfonso Jimenez del Toro, Orcun Goksel, Bjoern Menze, Henning Müller, Georg Langs, Ivan Eggel, Markus Holzer, Georgios Kontokotsios, Markus Krenn, Roger Schaer, Abdel Aziz Taha, Marianne Winterstein, and Allan Hanbury. Visceral-visual concept extraction challenge in radiology: Segmentation challenge: overview, insights and preliminary results. In *European Congress of Radiology (ECR) 2015*, Vienna, Austria, 2015.

Orcun Göksel, Oscar Alfonso Jimenez-del Toro, Antonio Foncubierta-Rodríguez, and Henning Müller. Overview of the visceral challenge at isbi 2015. In Orçun Göksel, Oscar Alfonso Jimenez-del Toro, Antonio Foncubierta-Rodríguez, and Henning Müller, editors, *Proceedings of the VISCERAL Anatomy Grand Challenge at the 2015 IEEE International Symposium on Biomedical Imaging (ISBI)*, New York, NY, May 2015.

- 2014 Abdel Aziz Taha, Allan Hanbury, and Oscar Jimenez. A formal method for selecting evaluation metrics for image segmentation. In *Image Processing (ICIP), 2014 IEEE International Conference on*, pages 932–936, Oct 2014.

Oscar Alfonso Jimenez del Toro, Orcun Goksel, Bjoern Menze, Henning Müller, Georg Langs, Marc André Weber, Ivan Eggel, Katharina Gruenberg, Markus Holzer, Andras Jakab, Georgios Kontokotsios, Markus Krenn, Tomas Salas Fernandez, Roger Schaer, Abdel Aziz Taha, Marianne Winterstein, and Allan Hanbury. Visceral - visual concept extraction challenge in radiology: Isbi 2014 challenge organization. In Orcun Goksel, editor, *Proceedings of the VISCERAL Challenge at ISBI*, number 1194 in CEUR Workshop Proceedings, pages 6–15, 2014.

- 2013 Abdel Aziz Taha. The EvaluateSegmentation Tool: An efficient tool for evaluating 3d medical segmentation using 20 evaluation metrics. <https://github.com/Visceral-Project/EvaluateSegmentation>, 2013.

A more comprehensive publication list: [list of my publications](#)

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