Prof. Dr. Wesley De Neve

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Short Biography

Wesley De Neve received the M.Sc. degree in Computer Science from Ghent University in 2002. He did his master's thesis on the design and implementation of a high-level application programming interface on top of the QuickTime multimedia framework. After obtaining the M.Sc. degree, he received a scholarship from the Special Research Fund of Ghent University, making it possible to start Ph.D. studies at the Multimedia Lab research group of Ghent University (now part of IDLab) and the Multimedia Technologies department of iMinds, the institute for ICT innovation and incubation in Flanders (now part of imec). In 2007, he obtained his Ph.D. degree in Computer Science Engineering with a dissertation on format-independent adaptation of multimedia content, under the supervision of Professor Rik Van de Walle. During his Ph.D. studies, he also participated in the standardization activities of the Moving Picture Experts Group (MPEG), contributing to the MPEG-21 Digital Item Adaptation framework.

In 2007, after his Ph.D. studies, he received a Brain Korea 21 (BK21) fellowship from the South Korean government to work at the Image and Video Systems Lab of Professor Yong Man Ro, first at the Information and Communications University (ICU), and later on at the Korea Advanced Institute of Science and Technology (KAIST), shifting his research focus from multimedia content representation to multimedia content analysis. In 2011, he re-joined the Multimedia Lab at Ghent University - iMinds as a postdoctoral fellow, while still maintaining an adjunct appointment with KAIST. At Multimedia Lab, he started the Social and Visual Intelligence (SaVI) research cluster, which focuses on the use of large-scale machine learning for the purpose of social media analysis and visual content understanding.

Since September 2014, Wesley De Neve is also working as a Professor at the Ghent University Global Campus (GUGC) in South

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Korea, co-directing the Center for Biotech Data Science. At GUGC, he is responsible for teaching two computer science courses: Informatics, which is a course on scientific problem solving using Python and UNIX, and Bioinformatics, which is an introductory course to algorithms sitting at the intersection of biology and computer science.

Furthermore, at GUGC, he is contributing to setting up research activities in the field of biotech data science, addressing short- and long-term challenges related to the storage, transmission, and analysis of high-throughput biotech data (that is, mainly visual and next-generation sequencing data). To that end, he is focusing on the development and evaluation of novel techniques for (privacy-aware) compression and streaming of biotech data, as well as novel techniques for deep learning-based mining and visualization of vast and heterogeneous sets of biotech data.

Research Area

- Machine learning
- Deep learning
- Bioinformatics
- Biotech data processing and analysis
- Multimedia content analysis

Education

- (2000) Ghent University, Belgium (BSc)
- (2002) Ghent University, Belgium (MSc)
- (2007) Ghent University, Belgium (PhD)

Experience

- (2007~2008) Post-doctoral researcher, Ghent University, Belgium
- (2007~2008) Post-doctoral researcher, ICU, Korea
- (2008~2009) Research assistant professor, ICU, Korea
- (2009~2012) Research assistant professor, KAIST, Korea
- (2011~2015) Post-doctoral researcher, Ghent University, Belgium
- (2012~present) Adjunct professor, KAIST, Korea
- (2014~present) Professor, GUGC, Korea
- (2015~present) Associate professor, Ghent University, Belgium

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Selected Publications	· Peter Lambert, Wesley De Neve, Yves Dhondt, Rik Van de Walle. Flexible Macroblock Ordering in H.264/AVC. Journal of Visual Communication & Image Representation. Vol. 17(2). April 2006. pp. 358–375. · Wesley De Neve, Davy Van Deursen, Davy De Schrijver, Koen De Wolf, Sam Lerouge, Rik Van de Walle. BFlavor: A Harmonized Approach to Media Resource Adaptation, inspired by MPEG-21 BSDL and XFlavor. EURASIP Signal Processing - Image Communication. Vol. 21(10). November 2006. pp. 862-889. · Sihyoung Lee, Wesley De Neve, Konstantinos N. Plataniotis, Yong Man Ro. MAP-based Image Tag Recommendation using a Visual Folksonomy. Elsevier Pattern Recognition Letters. Vol. 31(9). July 2010. pp. 976-982. · Jaeyoung Choi, Wesley De Neve, Konstantinos N. Plataniotis, Yong Man Ro. Collaborative Face Recognition for Improved Face Annotation in Personal Photo Collections Shared on Online Social Networks. IEEE Transactions on Multimedia. Vol. 13(1). February 2011. pp. 14-28. · Bart Pieters, Charles-Frederik Hollemeersch, Jan De Cock, Peter Lambert, Wesley De Neve, Rik Van de Walle. Parallel Deblocking Filtering in H.264/AVC on the Massively-Parallel Architecture of the GPU. IEEE Transactions on Circuits and Systems for Video Technology. Vol. 21(1). January 2011. · Tom Paridaens, Glenn Van Wallendael, Wesley De Neve, Peter Lambert. AFRESh: An Adaptive Framework for Compression of Reads and Assembled Sequences with Random Access Functionality. Bioinformatics. 33 (10): 1464-1472. January 2017.
Patents/Projects	· Yong Man Ro, Hyun-seok Min, Wesley De Neve. Method and apparatus for video copy detection. Korean patent. Date of application: 2010.03.22. Application number: 10-2010-0025140. Approval number: 10-1141596. Date of approval: 2012-04-24. · "Image Tag Refinement by Exploiting Collective Knowledge in a Refined Image Folksonomy". National Research Fund (NRF). Korea. May 2010 – April 2012. Role: Co-principal Investigator. · "STEAMER: Smart Text Enrichment Algorithms for Media Retrieval applications". iMinds/MiX. Belgium. July 2014 – December 2015. Role: Work Package Leader. · "FREME: Open Framework of E-Services for Multilingual and Semantic Enrichment of Digital Content". European Project (Horizon 2020). February 2015 – January 2017. Role: Co-

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principal Investigator for iMinds.

- · "Development of a Smart Polymorphic Continuous Automatic Packaging System". Korea Evaluation Institute of Industrial Technology (KEIT). Korea. July 2017 – December 2019. Role: Co-principal Investigator for GUGC.