Pierre Kibleur

Ph.D., Engineer

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French national • Driving licence B

Experience

UGCT, Ghent, Belgium
Doctoral researcher. Investigation of fibrous materials with X-ray computed tomography. Quantitative image analysis with deep learning and digital image correlation. Structural modeling with FEM. Author of 11 peer-reviewed publications and presenter at 6 international conferences. Supervisor of 3 M.Sc. theses on precision imaging; deep learning; robotics. Reviewer for 2 scientific journals: Holzforschung and Studies in Conservation — 2018-2022

Confinis AG, Geneva, Switzerland
Consulting intern. Assessment of the regulatory compliance of newly developed medical devices — 2018

University of Fribourg, Fribourg, Switzerland
Research scientist. Paid continuation of my M.Sc. thesis to write my first peer-reviewed publication — 2018

GTX medical, Lausanne, Switzerland
Robotics intern. Programming of a body weight support system for gait rehabilitation. Sent abroad on R&D stays at the Delft University of Technology and at Motek Medical in Amsterdam — 2017

EPFL, Lausanne, Switzerland
Teaching assistant. Providing support in mathematics for a group of 20 second-year physicists — 2016

Education

Ghent University, Ghent, Belgium
Ph.D. Bioscience Engineering; thesis on “4D X-ray micro-tomography investigation of water-induced swelling of wood fiberboards” — 2018-2022

EPFL, Lausanne, Switzerland
M.Sc. Computational Science and Engineering; thesis on “Biomechanical model of the primates’ upper limb: design of stimulation protocols for the recovery of reaching movements in tetraplegia” — 2015–2018
B.Sc. Physics; Erasmus+ exchange at ULB, Brussels — 2011–2015

Technical skills

Imaging: X-ray CT, dual-energy CT, chemical doping, SEM, SEM-EDX, macro photography
Programming: C/C++, Python, Matlab, Bash, CUDA, Basic, LaTeX
Libraries: Pandas, Scipy, skimage, OpenCV, tikz, TwinCAT, OpenSim, TensorFlow
Software: Dragonfly, Avizo, Fiji, Abaqus, Solid Works
Environments: Linux/Windows, Vim, Atom, Visual Studio, Jupyter, Overleaf
Office: LaTeX, Pack Office, Visio
Version control: Git, Team Foundation Server

Academic honors

Award: ICTMS 2022 Student Poster Award — 2022
Scholarship: Erasmus+ full-year exchange — 2014-2015

Languages

English: Fluent
French: Native speaker
Russian: Limited proficiency
Dutch: Notions

Free time

Competition rowing:
2021 Belgian champ.
Flute and saxophone

Peer-reviewed publications

- **Pierre Kibleur**, Benjamin Blykers, Matthieu N. Boone, Luc Van Hoorebeke, Joris Van Acker, and Jan Van den Bulcke. Detecting thin adhesive coatings in wood fiber materials with laboratory-based Dual-Energy Computed Tomography (DECT), *Scientific Reports*, 2022.
- **Pierre Kibleur**, Zaira Manigrasso, Wannes Goethals, Jan Aelterman, Matthieu N. Boone, Joris Van Acker, and Jan Van den Bulcke. Microscopic deformations in MDF swelling: a unique 4D-CT characterization, *Materials and Structures*, 2022.
- **Pierre Kibleur**, Jan Aelterman, Matthieu N. Boone, Jan Van den Bulcke, and Joris Van Acker. Deep learning segmentation of wood fiber bundles in fiberboards, *Composites Science and Technology*, 2022.
- Haichao Li, Jan Van den Bulcke, **Pierre Kibleur**, Orly Mendoza, Stefaan De Neve, and Steven Sleutel. Soil textural control on moisture distribution at the microscale and effect on organic matter mineralization, *Soil Biology and Chemistry*, 2022.
- Wanzhao Li, Zheng Zhang, Changtong Mei, **Pierre Kibleur**, Joris Van Acker, and Jan Van den Bulcke. Understanding the mechanical strength and dynamic structural changes of wood-based products using X-ray computed tomography, *Wood Material Science & Engineering*, 2022.
- Yuriy Sinchuk, **Pierre Kibleur**, Jan Aelterman, Matthieu N. Boone, and Wim Van Paepegem. Geometrical and deep learning approaches for instance segmentation of CFRP fiber bundles in textile composites, *Composite Structures*, 2021.
- Jure Žigon, Matjaž Pavlič, **Pierre Kibleur**, Jan Van den Bulcke, Marko Petrič, Joris Van Acker, and Sebastian Dahle. Treatment of wood with atmospheric plasma discharge: study of the treatment process, dynamic wettability and interactions with a waterborne coating, *Holzforschung*, 2021.
- **Pierre Kibleur**, Shravan R.Tata, Nathan Greiner, Sara Conti, Beatrice Barra, Katie Zhuang, Melanie Kaeser, Auke Ijspeert, and Marco Capogrosso. Spatiotemporal maps of proprioceptive inputs to the cervical spinal cord during three-dimensional reaching and grasping, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 2020.
- Yuriy Sinchuk, **Pierre Kibleur**, Jan Aelterman, Matthieu N. Boone, and Wim Van Paepegem. Variational and deep learning segmentation of very-low-contrast X-ray computed tomography images of carbon/epoxy woven composites, *Materials*, 2020.
- Wanzhao Li, Zheng Zhang, Guoqiang Zhou, **Pierre Kibleur**, Changtong Mei, Jiangtao Shi, Joris Van Acker, and Jan Van den Bulcke. The effect of structural changes on the compressive strength of LVL, *Wood Science and Technology*, 2020.
- Wanzhao Li, Chaoyi Chen, Jiangtao Shi, Changtong Mei, **Pierre Kibleur**, Joris Van Acker, and Jan Van den Bulcke. Understanding the mechanical performance of OSB in compression tests, *Construction and Building Materials*, 2020.
- Gerrit Ralf Surup, Henrik Kofoed Nielsen, Marius Großarth, Rüdiger Deike, Jan Van den Bulcke, **Pierre Kibleur**, Michael Müller, Mirko Ziegner, Elena Yazhenskikh, Sergey Beloshapkin, James J. Leahy, and Anna Trubetskaya. Effect of operating conditions and feedstock composition on the properties of manganese oxide or quartz charcoal pellets for the use in ferroalloy industries, *Energy*, 2020.
- Faezeh Rahbar, Ali Marjovi, **Pierre Kibleur**, and Alfio Martinoli, A 3-D bio-inspired odor source localization and its validation in realistic environmental conditions, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017.

Conference contributions

- **Pierre Kibleur**, Zaira Manigrasso, Wannes Goethals, Jan Aelterman, Matthieu N. Boone, Joris Van Acker, and Jan Van den Bulcke. Microscopic deformations in MDF swelling: a unique 4D-CT characterization, 5th International Conference on Tomography of Materials & Structures, 2022 (received the ICTMS student poster award).
- **Pierre Kibleur**, Zaira Manigrasso, Wannes Goethals, Jan Aelterman, Matthieu N. Boone, Joris Van Acker, and Jan Van den Bulcke. Caractérisation temporelle des déformations microscopiques dans les panneaux de fibres en conditions humides. 10èmes journées du GDR 3544 “Sciences du bois”, 2021.
- **Pierre Kibleur**, Wanzhao Li, Jan Van den Bulcke, and Joris Van Acker. 4D X-ray CT studies on wood-based panels at UGCT-Woodlab. 63rd International Convention of Society of Wood Science and Technology, 2020.
- **Pierre Kibleur**. Advanced X-ray CT scanning for lignocellulosic materials. 4th International EPNOE Junior Scientist Meeting, 2020 (invited speaker).
- **Pierre Kibleur**, Romain Lehnebach, Jan Van den Bulcke, and Joris Van Acker. Determining the local deformation fields of wood-based panels set in moist conditions. 8èmes journées du GDR 3544 “Sciences du bois”, 2019.
- **Pierre Kibleur**, Jan Van den Bulcke, and Joris Van Acker. Hygroscopic deformation of wood-based panels: a 4D μCT study. Measuring by Light meets OPTIMESS, 2019.