Pierre Kibleur

PhD, engineer in CSE

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Feb 17th, 1993 • French

Experience

Laboratory of wood technology, Ghent University, Ghent, Belgium
4D X-ray micro-tomography investigation of water-induced swelling of wood fiberboards (PhD thesis)   2018-2022

Confinis AG, Fribourg, Switzerland
Consulting in regulatory compliance (half-time)   2018

Biorobotics laboratory, EPFL, Lausanne, Switzerland
Biomechanical model of the primates' upper limb: design of stimulation protocols for the recovery of reaching movements in tetraplegia (Master thesis)   2018

GTX medical, Lausanne, Switzerland
Programming of a 3D robotic body weight support system for gait rehabilitation, integration of IMU sensors, writing and automation of the code's unit testing conform to medical software norms   2017

Education

EPFL, Lausanne, Switzerland
Master in computational science and engineering (CSE)   2015–2018
Bachelor in physics   2011–2015

ULB, Brussels, Belgium
Erasmus+ exchange, physics   2014–2015

Lycée Saint-Michel de Picpus, Paris, France
High school diploma in sciences   2011

Technical skills

Programming: C/C++, Python, Matlab, Bash, CUDA, Basic
Libraries: Pandas, Scipy, skimage, OpenCV, tikz, TwinCAT, OpenSim
Office: LaTeX, Pack Office, Visio
Usual environments: Linux, Vim, Jupyter, Atom, Visual Studio
Version control: Git, Team Foundation Server

Teaching

Supervision: Deep learning optimization and denoising of CT images (master thesis)   2021-2022
Supervision: XYZ cartesian robot for high-resolution imaging of wood disks (master thesis)   2020-2022
Supervision: Cell wall chemistry of trees as an indicator of past climate (master thesis)   2020-2021
Tutoring: Analysis III for physicists   2016

Languages

French/English: Fluent
Russian/Dutch: Limited proficiency

Free time

Sports: Rowing (Belgian champion M8+, 2021), running, swimming
Music: Flute and tenor 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.

- 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.

- **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.

- 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.

- Wanzhao Li, Chen, Chaoyi, 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.

- 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.

- **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.

- 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.

Other

Research stays abroad:

- Université de Pau et des Pays de l'Adour   2019
- Technical University of Denmark   2019
- Delft University of Technology   2017
- Motek Medical (Amsterdam)   2017

Reviewer for:

- Holzforschung
- Studies in Conservation