

Patrik Wili

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EDUCATION	
September 2020 - August 2022	MAS in Medical Physics, ETH Zürich Major in Bioimaging Focus on DECT, CT-spectroscopy and machine learning
	Master's Thesis SEQCT and DECT based bone volume fraction measurement – A qualitative comparison with a clinical dual source CT-Scanner analysis» Supervised by Prof. Dr. Philippe Zysset
September 2014 - October 2016	MSc in Biomedical Engineering, University of Bern Major in Biomechanical Systems Focus on biomechanics and FE-simulation
	Master's Thesis Topic: «Estimation of effective yield properties of human trabecular bone using nonlinear micro finite element analysis» Supervised by Prof. Dr. Philippe Zysset
September 2010 – July 2012	BSc in Mechanical Engineering, Hochschule Luzern Major in fluid mechanics and hydraulic machines Focus on product development, CFD and experimental flow visualization
	Bachelor's Thesis Topic: «Development of a bionic surf fin» Supervised by Prof. Dr. Thomas Staubli
September 2007 – Dec. 2009	Studying Mechanical Engineering, ETH Zürich Basic year, exmatriculation after 3 rd semester
June – August 2007	General English Course, BBELS Australia Advanced level
August 1999 – June 2006	Matura, Kantonsschule Sursee Focus on arts

WORKING EXPERIENCE	
January 2022 – today	Research Associate (40%) at IRM, University of Zürich Development of a dual-energy CT (DECT) model for bone density mea-
	surement
	CI-spectroscopyDECT-based material differentiation
May 2020 – today	Research Assistant (60%) at ARTORG Center, University of
	 Development of a methodology for virtual implant testing Micro finite element Analysis of bone-implant interaction FEA based evaluation of new implant designs Planning and execution of research projects with industry partners Project management and supervisions of student projects
September 2017 – April 2020	Biomedical Engineer at Nowak Engineering GmbH, Spreiten- bach
	 Developing of medical devices from draft over prototypes to pilot series Leading and cooperate in different product development projects for the medical device industry
	 Development of a two-piece ceramic dental implant system FEA simulations
	Planning and perform usability tests of clinical instruments Denial restaturing including 2D printing
	 Rapid prototyping, including 3D printing Contribution and consultant for MDR approval of medical devices
February – June 2017	Voluntary German & English Teacher at Zayed School (Ölgii, Mongolia)
	 Team-teaching with local German and English teachers Organizing workshops in teaching methods for the local teachers
October 2016 – January 2017	Teaching & Research Assistant at ISTR University of Bern
	 Micro finite element Analysis Implementing of a scalar damage output variable in to the ParFEAP code Supervision of the virtual laboratory in tissue biomechanics Experimental measurements linked with finite element analysis
August 2015	Mechanic at wimos AG, Pfaffnau
	Revision of large industrial plants and production lines
August 2014 – July 2015	Research assistant at the CC Fluid Mechanics and Hydraulic Machines, Hochschule Luzern
	 Leading and cooperation at multiple research projects Construction and building of measurement setups in a lab environment Evaluation and efficient handling of big data Teaching assistant of the CAD course Supervisions of bachelor thesis and laboratory exercises
July – September 2012	 Mechanic at wimos AG, Pfaffnaue Revision of large industrial plants and production lines
April 2011 – March 2012	 Supporting Assistant at ZIG, Horw Administrative office tasks

Student apprentice as Mechanic at Schaller Josef AG, Kamin-March – August 2010 und Metallbau, Buchrain Metal installations Production and processing of construction components • General tasks at the workshop Student apprentice at IBOR AG, CNC – Fertigung und Maschi-January – February 2008 nenbau, Ettiswil General CNC tasks Introduction in drilling and welding PUBLICATIONS The Thermal Conductivity of Cortical and Cancellous Bone 2018 Arne Feldmann, Patrik Wili, Ghislain Maquer, Philippe K. Zysset European Cells and Materials Vol. 35 2018 Estimation of the effective yield properties of human trabec-2017 ular bone using micro-finite element analysis Patrik Wili, Ghislain Maquer, Jarunan Panyasantisuk, Philippe K. Zysset Biomechanics and Modeling in Mechanobiology, 2017 Entwicklung einer bionischen Surfboard-Finne 2012 Patrik Wili, Regine Schwilch, Thomas Staubli 6. Bionik-Kongress, 2012 LANGUAGE SKILLS Native language German English Excellent Good spoken and written skills Basic spoken and written skills French

SOFTWARE SKILLS _

Operating systems	Linux, Windows
Programming languages	Python, R, Matlab
Engineerng Tools	Abaqus CAE, Ansys, medtool, ITK-snap, ImageJ, Creo Parametric
Office software	MS and Open Office, Latex