**SERENA BONARETTI**

**Curriculum Vitae**

**PERSONAL INFORMATION**

Email Address [serena.bonaretti.research@gmail.com](mailto:serena.bonaretti.research@gmail.com)

Webpage [sbonaretti.github.io](https://sbonaretti.github.io/)

GitHub [github.com/sbonaretti](https://github.com/sbonaretti/)

ORCID [orcid.org/0000-0003-4264-1773](https://orcid.org/0000-0003-4264-1773)

YouTube [www.youtube.com/@serenabonaretti](http://www.youtube.com/@serenabonaretti)

LinkedIn <https://www.linkedin.com/in/serena-bonaretti-1bb9b239/>

Twitter [@SerenaBonaretti](https://twitter.com/SerenaBonaretti)

**EMPLOYMENT**

10.2022 – present Senior Research Scientist, Balgrist Campus, Zürich, Switzerland

08.2020 – 09.2022 Independent Teacher, C as in Coding (sole proprietorship), Maastricht, The Netherlands

10.2019 – 09.2022 Independent Research Scientist, Transparent MSK Research (sole proprietorship), Maastricht, The Netherlands

03.2019 – 08.2019 Research Scientist, Department of Bioinformatics, Maastricht University, The Netherlands

Projects: *NanoSolveIT* and *RiskGONE* (Engineered nanomaterial toxicology)

Advisor: Egon Willighagen

01.2016 – 07.2018 Physical Science Research Specialist, Department of Radiology, Stanford University, USA

Research Biomedical Engineer, Department of Veterans Affairs, Palo Alto, USA

Projects: *Automatic segmentation of MR images of the knee* and *Weight-bearing imaging of the knee using C-arm CT*

Advisors: Gary Beaupre and Garry Gold

01.2015 – 12.2015 Associate Specialist, Department of Radiology and Biomedical Imaging, University of California, San Francisco, USA

Project: *Standardization of acquisition procedure for bone imaging for multicenter clinical research*

Advisors: Thomas Lang and Andrew Burghardt

03.2012 – 12.2014 Postdoctoral Scholar, Department of Radiology and Biomedical Imaging, University of California, San Francisco, USA

Project: *Standardization of acquisition procedure for bone imaging for multicenter clinical research*

Advisors: Thomas Lang and Andrew Burghardt

11.2005 – 11.2007 Clinical Engineer, Department of Audiology, Fondazione Audiologica Varese ONLUS, Ospedale di Circolo - Fondazione Macchi, Varese, Italy

Role: Responsible of the department instrumentation and support for scientific activities

Advisor: Sandro Burdo

04.2005 – 10.2005 Research Assistant, Institute of Biomedical Engineering - National Research Council of Italy (ISIB-CNR), Politecnico di Milano, Italy

Project: *Segmentation of mandibular nerve from CT images*

Advisors: Gabriella Tognola and Paolo Ravazzani

05.2003 – 07.2003 Research Assistant, Institute of Biomedical Engineering - National Research Council of Italy (ISIB-CNR), Politecnico di Milano, Italy

Project: *Segmentation of brain image for electromagnetic field estimation*

Advisors: Paolo Ravazzani and Marta Parazzini

**EDUCATION**

12.2007 – 01.2012 PhD in Biomedical Engineering, Institute for Surgical Technology and Biomechanics, University of Bern, Switzerland

Thesis: *Statistical Models of Shape and Density for Population-based Analysis of Bone Mechanics with Applications to Fracture Risk Assessment and Implant Design*

Advisors: Mauricio Reyes and Philippe Büchler

10.2003 – 10.2005 MSc in Biomedical Engineering, Politecnico di Milano, Italy

Thesis: *Methods for 2D and 3D segmentation and rendering of CT images: Validation and application in maxillofacial surgery* (in Italian)

Advisors: Gabriella Tognola and Paolo Ravazzani

10.2000 – 10.2003 BSc in Biomedical Engineering, Politecnico di Milano, Italy

Advisor: Paolo Ravazzani

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| **OPEN SOURCE SOFTWARE** |

Developed

1. *pyKNEEr* ([GitHub repository](https://github.com/sbonaretti/pyKNEEr), [documentation](https://sbonaretti.github.io/pyKNEEr/index.html), [video](https://www.youtube.com/channel/UCk1sLroo_tgJqcn-0EVh6zQ/videos))

An image analysis workflow for open and reproducible research on femoral knee cartilage

1. *SAMforFEM* ([GitHub repository](https://github.com/sbonaretti/SAMforFEM), [documentation](https://github.com/sbonaretti/SAMforFEM/tree/master/doc))

Statistical appearance model (SAM) of femur for finite element (FE) simulations of different populations

Contributing

1. *ORMIR-MIDS* ([GitHub repository](https://github.com/ormir-mids))

A Python package and standard for the management of MSK medical images

1. *ORMIR\_XCT* ([GitHub repository](https://github.com/SpectraCollab/ORMIR_XCT/))

A Python package for the processing of High Resolution peripheral Quantitative Computed Tomography (HR-pQCT) images

Supervised

1. *Reference line - Training & evaluation* ([Web application](http://webapps.radiology.ucsf.edu/refline), [GitHub repository](https://github.com/sbonaretti/referenceLine), [documentation](http://webapps.radiology.ucsf.edu/refline/))

A web application to train and evaluate operators when scanning with High Resolution Peripheral Quantitative Computed Tomography (HR-pQCT).

Student: Caroline Mai Chan, University of California, San Francisco, USA.

1. *FEM assigner* ([GitHub repository](https://github.com/sbonaretti/FEpropAssigner), [documentation](https://github.com/sbonaretti/FEpropAssigner/tree/master/CodeDocumentation))

Assigning bone material properties to finite element (FE) meshes from quantitative computed tomography images

Student: Andreas Siegrist, University of Bern, Switzerland.

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| **FUNDING AND AWARDS** |

**FUNDING**

03.2024 *Standardizing computational workflows to create personalized image-based knee models*

Role: Only applicant. Funder: Balgrist Foundation. Amount: 30K CHF

08.2023 *Sharing and curating open data in musculoskeletal imaging research*

Role: Main applicant. Funder: Swiss National Science Foundation. Amount: 20K CHF

07.2022 *Development of an open-source reference data set, image repository, and interactive training tool for bone damage assessment in inflammatory arthritis*

Role: Co-Applicant. Funder: Canadian Institutes of Health Research (Canada). Amount: 10K CAD

01.2020 *Building the Jupyter Community in Musculoskeletal Imaging Research*

Role: Main applicant. Funder: NumFOCUS (USA). Amount: 19K USD

01.2020 *Exploration of SPECTRA image metadata for database development*

Role: Co-Applicant. Funder: Canadian Institutes of Health Research (Canada).

**AWARDS AND HONORARIA**

03.2023 Scholarship to participate to JupyterCon 2023 (600 USD)

07.2022 Honorarium for organizing the workshop “Building the Jupyter Community in Musculoskeletal Imaging Research” on June 9-11, 2022. (500 USD)

10.2014 Young Investigator Award, poster presentation, second author, American Society for Bone Mineral Research (without remuneration)

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| **TEACHING AND MENTORING ACTIVITIES** |

**TEACHING WORKSHOPS**

07.06. 2024 [*Open Science in Practice*](https://github.com/sbonaretti/sbms2024)

Workshop at the Summer School of the Swiss Bone and Mineral Society. Olten, Switzerland.

16.11.2023 [*Hands on bookclub workshop: “Learn Python with Jupyter”*](https://www.meetup.com/pyladies-hamburg/events/296944935/)

PyLadies Hamburg. Hamburg, Germany

10.06.2022 [*Open and reproducible second layer analysis using Jupyter Notebook and Python*](https://github.com/sbonaretti/2022_JCWMSK_tutorials)

Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging. Maastricht, The Netherlands

09.06.2022 [*Introduction to the Jupyter ecosystem and Python*](https://github.com/sbonaretti/2022_JCWMSK_tutorials)

Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging. Maastricht, The Netherlands

22.01.2020 [*Python and Jupyter Notebook for Medical Image Analysis*](https://github.com/sbonaretti/2020_OpenMR_jupyter)

OpenMR Benelux, Nijmegen, The Netherlands

**ONE-TO-ONE TEACHING**

08.2020 – 09.2022 Teaching coding and computational thinking. Supporting for university exam and projects.

Student reviews [here](https://www.google.com/search?q=casincoding&oq=casincoding&aqs=chrome..69i57j69i60.3734j0j7&sourceid=chrome&ie=UTF-8#lrd=0x47c0e9979afd400b:0xd99f60a007a58e74,1,,,).

**IN-CLASS TEACHING**

11.2017 Guest Lecturer, Surgery Without All the Blood (RAD 70N), Stanford University, USA

*Introduction to Interventional Radiology at the Zeego Lab* (Laboratory)

04.2017 – 06.2017 Co-instructor (50%), Orthopaedic Bioengineering (BIOE/ME 381), Stanford University, USA

[*Bone anatomy and physiology*](https://sbonaretti.github.io/_attachments/BIOE381_1.pdf)*,* [*bone mechanics at the organ level*](https://sbonaretti.github.io/_attachments/BIOE381_2.pdf)*,* [*bone mechanics at the tissue level*](https://sbonaretti.github.io/_attachments/BIOE381_3.pdf)*,* [*principles of X-ray imaging*](https://sbonaretti.github.io/_attachments/BIOE381_4.pdf)*,* [*bone imaging*](https://sbonaretti.github.io/_attachments/BIOE381_5.pdf)*, and* [*bone quality, fracture, and fixation*](https://sbonaretti.github.io/_attachments/BIOE381_6.pdf) (Lectures). Bone fixation (Laboratory)

01.2017, 01.2018 Guest Lecturer, Clinical Needs and Technology (BIOE 301B), Stanford University, USA

[*Introduction to X-ray-based Imaging*](https://sbonaretti.github.io/_attachments/BIO301B.pdf)(Lecture)

*Minimally Invasive Therapies in Swine* (Laboratory)

10.2016 Guest Lecturer, Introduction to Bioengineering Research (BIOE 390/MED 289), Stanford University, USA

*Weight-bearing Imaging of the Knee Using C-arm CT* (Lecture)

03.2015 Guest Lecturer, Image Processing and Analysis II (BI 265), University of California San Francisco, USA

*Active Shape and Appearance Modeling in Medical Imaging* (Blackboard lecture)

01.2014, 01.2015 Guest Lecturer, Musculoskeletal Imaging (BI 240), University of California San Francisco, USA

*Assessment of Bone Strength - Foundations of FE and microFE* (Blackboard lecture)

12.2009 Guest Lecturer, Medical Image Analysis, ETH Zürich, Switzerland

[*Statistical Shape Models*](https://sbonaretti.github.io/_attachments/SSM.pdf)(Lecture)

10.2009 Guest Lecturer, Medical Image Analysis, University of Bern, Switzerland

[*Statistical Shape Models*](https://sbonaretti.github.io/_attachments/SSM.pdf)(Lecture)

**MENTORING**

06.2024 – present Hemachandra Konduru, summer project. University of Winsconsin, USA

11.2023 – present Abhishek Samanta, internship and M.Sc. thesis. Saarland University, Germany. Co-supervisors: Anjany Sekuboyina, Bjoern Menze

09.2023 – 03.2023 Yannick Wattenberg, internship. ETH Zurich, Switzerland. Co-supervisors: Bastian Wittmann, Vincent Stadelmann, Bjoern Menze

07.2023 – present Francesco Chiumento. M.Sc. thesis. Rizzoli Orthopaedic Institute Bologna and University of Padova, Italy. Co-supervisor: Fulvia Taddei

02.2022 – 07.2022 Ranjan Mishra, B.Sc. thesis. *Conformal prediction for OAI biomarkers*. University College Maastricht, The Netherlands. Co-supervisor: Christof Seiler

03.2017 – 02.2018 Fatih Chengiz, M.Sc. thesis. *Automatic segmentation of the meniscus from MR images*. University of Erlangen-Nuremberg, Germany. Co-supervisor: Andreas Meier

06.2016 – 08.2016 Alyssa Hobson and Sandra Ortellado, Summer project. *Segmentation of knee bones from weight-bearing cone-beam computed tomography images*. Stanford University, USA. Co-supervisors: Members of the Garry Gold’s and Marc Levenston’s labs

06.2016 – 08.2016 Francisco Lopez and Heidi Poppe, Summer project. *Subject’s support platform for weight-bearing cone-beam computed tomography imaging*. Stanford University, USA. Co-supervisors: Members of the Garry Gold’s and Marc Levenston’s labs

05.2015 – 12.2015 Caroline Mai Chan. Development of webapp: [Reference line – Training and Evaluation](http://webapps.radiology.ucsf.edu/refline/). University of California San Francisco, USA. Co-supervisor: Andrew Burghardt

06.2014 – 12.2015 Andrew Yu, Internship. *Data management for the* *MrOS project*. University of California San Francisco, USA. Co-supervisor: Andrew Burghardt

09.2010 – 03.2011 Saloni Soin, M.Sc. thesis. *Preformed cranial implants*, University of Bern, Switzerland. Co-supervisor: Mauricio Reyes

11.2009 – 10.2010 Andreas Siegrist, B.Sc. thesis on Bone material property assignment for finite element analysis, Fachhochschule Nordwestschweiz Biel and University of Bern, Switzerland. Co-supervisor: Mauricio Reyes and Benedikt Helgason

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| **TALKS AND EVENTS** |

**INVITED TALKS**

03.10.2024 (planned) *Title to be determined*. Topic: Open science in musculoskeletal imaging

Keynote at the Special Session on Open science in Musculoskeletal Imaging at the 16th Congress of the International Society for Bone Morphometry (ISBM). Toronto, Canada

08.12.2023 [*Introducing the ORMIR community*](http://www.doi.org/10.5281/zenodo.10355070)

MRI Together – A Global Workshop on Open Science and Reproducible Research. Virtual

17.11.2023 [*Introducing the ORMIR community and the book “Learn Python with Jupyter”*](http://www.doi.org/10.5281/zenodo.10354992) ([video](https://www.youtube.com/watch?v=0Fp_lQ1oimE) at 1h47’)

Python Pizza Hamburg. Hamburg, Germany

09.06.2023 [*Why and how to do open and reproducible research*](https://zenodo.org/record/8018076)

Summer school of the Swiss Bone and Mineral Society. Thun, Switzerland

11.05.2023 [*Introducing the ORMIR community and the book “Learn Python with Jupyter”*](https://zenodo.org/record/8155021)([video](https://www.youtube.com/watch?v=56GFrX5INrQ) at 58’)

Lightening talk. JupyterCon 2023.

09.02.2023 [*Why and how to do open and reproducible research*](https://doi.org/10.5281/zenodo.7619997)([video](https://www.youtube.com/watch?v=FutWScaLLFs))

European Society of Biomechanics. Webinar.

10.11.2022 [*Open and reproducible coding: Perspective of an MSK imaging researcher*](https://doi.org/10.5281/zenodo.7307882)([video](https://www.youtube.com/watch?v=YiBjBt3NR8M))

Open Science Seminar Series, University of Basel, Switzerland. Webinar.

10.05.2022 [*Open Science: Perspective of a researcher who codes*](http://www.doi.org/10.5281/zenodo.6532039)

The Reproducibility Crisis – Perspectives from Funders, Researchers, and Journal Editors, Workshop at the International Society for Magnetic Resonance in Medicine (ISMRM) Conference. London, United Kingdom.

14.03.2022 [*Within the data life cycle: Perspective of an MSK imaging researcher*](https://doi.org/10.5281/zenodo.6973403)

Informatics Institute, University of Amsterdam. Amsterdam, The Netherlands

13.12.2021 *Debate: Open Science in the MR Community* ([video](https://www.youtube.com/watch?v=8vNCLaYeNvY))

MRI Together – A Global Workshop on Open Science and Reproducible Research. Virtual

12.11.2021 *Development of a centralized metadata and data syndication platform for SPECTRA*

SPECTRA 2021 Virtual Workshop. Virtual.

02.07.2021 [*Open data: Perspective of an MSK researcher who codes*](https://doi.org/10.5281/zenodo.4986422)([video](https://youtu.be/KyfeKXtS2Kw))

Panel discussion “The Open Data Paradigm”, The International Workshop on Osteoarthritis Imaging. Rotterdam, The Netherlands.

11.07.2020 [*Why we should use Jupyter notebook in Medical Image Analysis*](http://www.doi.org/10.5281/zenodo.3939392) ([video](https://www.youtube.com/watch?v=QSSgLflyisI))

Think Open Rovereto Workshop. Trento University, Italy (Virtual)

26.09.2019 [*Transparent Quantitative Musculoskeletal Imaging*](http://www.doi.org/10.5281/zenodo.3460433)

Department of Mechanical Engineering, Division of Biomechanics, KU Leuven. Leuven, Belgium.

12.09.2019 [*Transparent Research: Open-Access Data, Reproducible Workflows, and Interactive Publications*](http://www.doi.org/10.5281/zenodo.3403080)

7th Annual Tomography for Scientific Advancement (ToScA) Symposium. Southampton, United Kingdom.

20.06.2019 [*Transparent Quantitative Musculoskeletal Imaging*](http://www.doi.org/10.5281/zenodo.3250360)

Department of Radiology, Erasmus Medical Center. Rotterdam, The Netherlands.

02.05.2019 [*Data Management for Transparent Research*](http://www.doi.org/10.5281/zenodo.2667536)

BiGCaT Science Café, Maastricht University. Maastricht, The Netherlands.

18.04.2019  [*Transparent Research: Open-Access Data, Reproducible Workflows, and Interactive Publications*](http://www.doi.org/10.5281/zenodo.2667528)

BiGCaT Science Café. Maastricht University. Maastricht, The Netherlands.

22.12.2015 [*Bone quality by QCT and HR-pQCT: Translation to multicenter clinical research*](file:///Users/sbonaretti/Dropbox/Work/website/sphinx/build/html/_attachments/2015_Erlangen_Bologna.pdf)

Istituti Ortopedici Rizzoli. Bologna, Italy

16.12.2015 [*Bone quality by QCT and HR-pQCT: Translation to multicenter clinical research*](file:///Users/sbonaretti/Dropbox/Work/website/sphinx/build/html/_attachments/2015_Erlangen_Bologna.pdf)

Pattern Recognition Lab, University of Erlangen-Nuremberg. Erlangen, Germany

16.09.2014 *Intra- and inter-operator variability in HR-pQCT scan positioning*

2nd XtremeCT User Meeting, workshop at the American Society for Bone and Mineral Research (ASBMR) conference. Houston, TX, USA

**CHAIRING AND ORGANIZING WORKSHOPS AND CONFERENCES**

5.11.2024 (planned) *Why and how sharing musculoskeletal imaging data?* Workshop at the 24th International Workshop on Quantitative Musculoskeletal Imaging (QMSKI). Barossa Valley, Australia

Role: Co-organizer

15-18.01.2024 [*Sharing and curating open data in musculoskeletal imaging research*](https://github.com/ORMIRcommunity/2024_2nd_ORMIR_WS/blob/main/README.md). Zurich, Switzerland

Role: Chair, co-organizer

13.06.2022 [*Introducing the Open and Reproducible Musculoskeletal Imaging Research (ORMIR) community*](https://doi.org/10.5281/zenodo.6973540). Workshop at the 23rd International Workshop on Quantitative Musculoskeletal Imaging (QMSKI). Noordwijk, The Netherlands

Role: Chair, co-organizer, and presenter

9-11.06.2022 [*Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging*](https://github.com/JCMSK/2022_JCW/blob/main/README.md)*.* Maastricht, The Netherlands

Role: Chair, organizer, and lecturer

25.02.2019 [*Hands-on transparent QMSKI: Open-access data, reproducible workflows, and interactive publications*](https://doi.org/10.5281/zenodo.2577616)*.* Workshop at the 22nd International Workshop on Quantitative Musculoskeletal Imaging (QMSKI), Chateau Lake Louise, AB, Canada

Role: Chair, organizer, and presenter

6-9.07.2008 *16th Congress of the European Society of Biomechanics*. Lucerne, Switzerland

Role: Staff member

9-12.05.2007 *Objective Measures in Cochlear and Brainstem Implants – 5th International Symposium and Related Additional Events*. Varese, Italy

Role: Organizing committee and staff member

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| **DISSEMINATION** |

**VIDEOS**

12.2019 – present [YouTube channel](https://www.youtube.com/channel/UCk1sLroo_tgJqcn-0EVh6zQ) with basics and hands-on tutorials on Open and Reproducible Research.

Playlists with videos I created: [Transparent Research 101](https://www.youtube.com/playlist?list=PLj8QFvBykB7cdVPr6CY08UyPPPzy8R2Ar), [Jupyter Notebook and Python for Scientists](https://www.youtube.com/playlist?list=PLj8QFvBykB7fGEH274TlqhToqGd_Qxt1H), [Step-by-step Tutorials for Transparent Research](https://www.youtube.com/playlist?list=PLj8QFvBykB7dtTd_HiOTbctHvU6pbGC0i), and [Medical Image Analysis](https://www.youtube.com/playlist?list=PLj8QFvBykB7fhNcM1j5iBF5AeZA7O-lJo)

Playlist with videos I collect: [Serena’s talks](https://www.youtube.com/playlist?list=PLj8QFvBykB7f-9O5yfTRkwlvRasOsHugj), [Coding Women](https://www.youtube.com/playlist?list=PLj8QFvBykB7cyZkTYYI0sP6b-T0n9SChJ)

**INTERVIEWS**

19.08.2023 [La cultura del Dato](https://stefanogatti.substack.com/p/laculturadeldato-075), by Stefano Gatti (in Italian with English translation)

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| **SERVICE** |

**COMMUNITY AND UNIVERSITY SERVICE**

09.2023 – present Member of the Insight Software Consortium Council (ITK) (<https://insightsoftwareconsortium.org/>)

12.2019 – present Co-founder and coordinator of the Open and Reproducible MSK Imaging Research (ORMIR) community ([ormir.org](https://ormircommunity.github.io/))

11.2016 – 07.2018 Associate Director of the Zeego Laboratory, Department of Radiology, Stanford University, USA

01.2016 – 07.2018 Creation and maintenance of webpages of the JOINT group and of the Zeego Lab, Stanford University, USA

01.2015 – 12.2015 Contribution to the webpage of the Musculoskeletal CT Imaging Research Group, University of California San Francisco, USA

01.2010 – 12.2011 Contribution to the webpage of the Institute for Surgical Technology and Biomechanics, University of Bern, Switzerland

**SCIENTIFIC REVIEWING ACTIVITIES**

*Conference reviewer*

2024 – present Member of the Scientific Review Committee and of the Open Science Award Committee for the 24th QMSKI workshop

*Grant reviewer*

2015 – 2016 American Society for Bone and Mineral Research

*Journal reviewer*

2016 – present Physica Medica

2016 – present Biomechanics and Modeling in Mechanobiology

2015 – present Journal of Computer Methods in Biomechanics and Biomedical Engineering

2014 – present Journal of Bone and Mineral Research

2014 – present Journal of Medical Imaging and Health Informatics

2014 – present Bone

2013 – present Journal of Biomechanics

2013 – present Medical Physics

2011 – present IEEE - Transaction on Medical Imaging

**MEMBERSHIPS IN SCIENTIFIC SOCIETIES**

2016 - 2017 International Society for Magnetic Resonance in Medicine

2016 - 2017 Osteoarthritis Research Society International

2012 - 2015 American Society of Bone and Mineral Research

2008 - 2010 European Society of Biomechanics

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| **PUBLISHING** |

**BOOK**

1. Bonaretti S. [Learn Python with Jupyter](https://learnpythonwithjupyter.com/). 2022 (completion expected in 2025)

**NON-ACADEMIC WRITING**

1. Bonaretti S. [Introducing “Learn Python with Jupyter” – A free course book to develop computational thinking while learning to code](https://blog.jupyter.org/introducing-learn-python-with-jupyter-11214f152159). 28 April 2023. Blogpost on Jupyter Blog in Medium.com
2. Bonaretti S., Cameron D., Kuczynski M., Iori G., on behalf of the participants to the workshop. [Report on the Jupyter Community Workshop “Building the Jupyter Community in Musculoskeletal Imaging Research”](https://medium.com/p/77016ab1d49b). 30 November 2022. Blogpost on Jupyter Blog in Medium.com

**PREPRINTS**

1. Bonaretti S. et al. [Introducing the Open and Reproducible Musculoskeletal Imaging (ORMIR) community](https://doi.org/10.5281/zenodo.8119243). Zenodo. 2023.

**PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS**

1. Kuczynski M., Neeteson N., Stok K., Burghardt A.,  Espinosa Hernandez M., Vicory J., Tse J., Durongbhan P., Bonaretti S.,  Wong A.K.O., Boyd S., Manske S. [ORMIR\_XCT: A Python package for high resolution peripheral quantitative computed tomography image processing](https://doi.org/10.21105/joss.06084). Journal of Open Science Software, 9(97), 6084. 2024.
2. Ammar A., Bonaretti S.\*, Winckers L., Quik J., Bakker M., Maier D., Lynch I., van Rijn J., Willighagen E. [A Semi-Automated Workflow for FAIR Maturity Indicators in the Life Sciences](http://www.doi.org/10.3390/nano10102068). Nanomaterials, 10, 2068. 2020. (\*co-first author).
3. Bonaretti S., Gold G.E., Beaupre G.E. [*pyKNEEr*: An Image Analysis Workflow for Open and Reproducible Research on Femoral Knee Cartilage](https://doi.org/10.1371/journal.pone.0226501). PLoS ONE 15(1): e0226501. 2020.
4. Pang E.Q., Coughlan M., Bonaretti S., Finlay A., Bellino M., Bishop J., Gardner M.J. [Assessment of Open Syndesmosis Reduction Techniques in an Unbroken Fibula Model: Visualization vs. Palpation](https://www.ncbi.nlm.nih.gov/pubmed/30169400).J. Orthop Trauma. 2018.
5. Maier J., Black M., Bonaretti S., Bier B., Eskofier B., Choi J.H. Levenston M., Gold G., Fahrig R., Maier A. [Comparison of Different Approaches for Measuring Tibial Cartilage Thickness](https://www.ncbi.nlm.nih.gov/pubmed/28753537). J Integr Bioinform. 14(2),1-10. 2017.
6. Bonaretti S., Vilayphiou N., Chan C. M., Yu A., Nishiyama K., Liu D., Boutroy S., Ghasem-Zadeh A., Boyd S.K., Chapurlat R., McKay H., Shane E., Bouxsein M.L., Black D.M., Majumdar S., Orwoll E.S., Lang T.F., Khosla S., Burghardt A.J. [Operator variability In Scan Positioning is a Major Component of HR-pQCT Precision Error and is Reduced by Standardized Training](https://www.ncbi.nlm.nih.gov/pubmed/27475931).Osteoporos Int. 28(1), 245-257. 2017.
7. Bonaretti S.., Holets M., Majumdar S., Lang T.F., Khosla S., Burghardt A.J. [The Comparability of HR-pQCT Bone Quality Measures is Improved by Scanning Anatomically Standardized Regions](https://www.ncbi.nlm.nih.gov/pubmed/28391447).Osteoporos Int. 28(7), 2115-2128. 2017.
8. Carballido-Gamio J., Bonaretti S., Kazakia G.J., Khosla S., Majumdar S., Lang T.F., Burghardt A.J. [Statistical Parametric Mapping of HR-pQCT Images: A Tool for Population-Based Comparison of Micro-Scale Bone Features](https://www.ncbi.nlm.nih.gov/pubmed/27830488). Ann Biomed Eng. 45(5), 949-962. 2017.
9. Ghasem-Zadeh A., Burghardt A.J., Wang X.F., Iuliano S., Bonaretti S., Bui Q.M., Zebaze R., Seeman E. [Quantifying Sex, Race and Age Specific Differences in Bone Microstructure Requires Measurement of Anatomically Equivalent Regions](https://www.ncbi.nlm.nih.gov/pubmed/28502884). Bone. 101, 206-213. 2017.
10. Carballido-Gamio J., Bonaretti S., Saeed I., Harnish R., Recker R., Burghardt A.J., Keyak J.H., Harris T., Khosla S., Lang T.F. [Automatic Multi-Parametric Quantification of the Proximal Femur with QCT](https://www.ncbi.nlm.nih.gov/pubmed/26435919). Quant Imaging in Med and Surg. 5(4), 552-568. 2015.
11. Bonaretti S., Carpenter D.R., Saeed I., Burghardt A.J., Yu L., Bruesewitz M., Khosla S., Lang T. [Novel Anthropomorphic Hip Phantom Corrects Systemic Interscanner Differences in Proximal Femoral vBMD](https://www.ncbi.nlm.nih.gov/pubmed/25419618).Phys Med Biol. 59, 7819-7834. 2014.
12. Carpenter R.D., Saeed I Bonaretti S., Schreck C., Keyak J.H., Streeper T., Harris T.B., Lang T.F. [Inter-scanner Differences in In Vivo QCT Measurements of the Density and Strength of the Proximal Femur Remain After Correction with Anthropomorphic Standardization Phantoms](https://www.ncbi.nlm.nih.gov/pubmed/25001172). Med Eng Phys. 36, 1225-1232. 2014.
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