

Karupppasamy Subburaj, PhD

Singapore University of Technology and Design (SUTD)
Engineering Product Development (EPD) Pillar
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SUMMARY

- 10 years of research experience in Medical Imaging, Image Analysis, Bioengineering, and Medical Devices
- 30 technical publications in refereed international journals
- 2 technology disclosure and transfer (software)
- 2 edited books on Medical Imaging and Computer Aided Design
- **Research and Teaching Interests**
 - Product** : Assistive technologies, Patient-specific Medical Devices, Monitoring, Diagnostics.
 - Tools** : Medical Imaging (MRI/CT/US), Image Analysis, 3D Printing, Finite Element Analysis
 - Science** : Joint Tissue Health, Biomechanics, Bone Quality, Physical Activity
 - Diseases** : Osteoarthritis, Bone Tumours, Osteoporosis, Bone Fracture

EDUCATION

- PhD** in Mechanical Engineering, *Indian Institute of Technology Bombay, India* 07/2005 – 08/2009
- *Thesis: 3D Geometric Reasoning Algorithms for Reconstructive Surgery Planning of Tumour Knee Joint*
- M.Eng.** in Mechanical Engineering, *Maharaja Sayajirao University of Baroda, India* 07/2003 – 06/2005
- *First Class with Distinction*
- B.Eng.** in Mechanical Engineering, *Manonmaniam Sundaranar University, India* 08/1999 – 05/2003
- *First Class with Distinction*

EXPERIENCE

- Singapore University of Technology and Design** 09/2014 – present
Assistant Professor, *Engineering Product Development (EPD) Pillar*
- University of California San Francisco, California, USA** 02/2010 – 02/2014
Postdoctoral Scholar, *Department of Radiology & Biomedical Imaging*
- Indian Institute of Technology Bombay, Mumbai, India** 07/2009 – 01/2010
Senior Research Associate, *Biomedical Engineering and Technology (incubation) Centre*
- Central Mechanical Engineering Research Institute, Durgapur, India** 05/2004 – 06/2005
Research Assistant, *Rapid Prototyping and Tooling Unit*

GRANTS

- SUTD - Surgery ACP SJRF (Role: Co-PI)** 09/2017 – 03/2019
Digital Spirometer (PI: Dr. Alex Binder, SUTD)
- SUTD-MIT IDC Research Grant (Role: Co-PI)** 01/2017 – 12/2019
InnoGPS: a System for Design Opportunity Conception (PI: Dr. Jianxi Luo, SUTD)
- SUTD - Surgery ACP SJRF (Role: PI)** 04/2016 – 03/2018
3D Ultrasound Imaging of Hand (Clinical PI: Dr. Duncan A. McGrouther, SGH)
- Health Tech Innovation Fund (Role: PI)** 01/2016 – 03/2018
Design and Development of Knee Unloader Brace (Clinical PI: Dr. Dave Lee, CGH)
- Health Tech Innovation Fund (Role: Co-I)** 01/2016 – 12/2017
Image-guided Intra-operative Tracking of Kidney Stones (PI: Dr. Tan U-Xuan, SUTD)

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|---|-------------------|
| SUTD SRG (Role: PI) Design Computation Methods for Biomechanical Studies of Musculoskeletal Structure | 01/2015 – 12/2017 |
| IDC Infrastructure Grant (Role: Co-PI) Kinetics and Kinesiology Instrumentation System | 05/2015 – 04/2016 |
| NIH/NIAMS R01 (Role: Co-I) Contact mechanics of knee (PI: Dr. Rich Souza, UCSF) | 09/2011 – 08/2015 |
| UCSF RPG (Role: PI) Short-term effects of running on MR relaxation of knee cartilage and meniscus | 01/2011 – 12/2011 |

TECHNOLOGY

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| IPP: Software for Quantitative Cartilage Biomarker Assessment Software product for measuring $T_{1\rho}$ and T_2 relaxation and morphological metrics of cartilage | 11/2011 |
| OrthoSYS: Software for 3D Medical Modelling, Surgery Planning, and Implant Design Generating 3D anatomical models from CT/MR images, visualization, and surgery planning. | 10/2009 |

TEACHING

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|---|-------------------|
| Assistant Professor, <i>Engineering Product Development, SUTD</i> Subjects: UG: 30.007 Engineering Design & Project Engineering (2015 – 2017) – <i>Lead + Cohort Instructor</i> 03.007 Introduction of Design (2015 – 2017) – <i>Cohort Instructor</i> 01.101 Global Health Technologies (2015 – 2017) – <i>Guest Lecturer</i> 30.203 Topics in Biomedical and Healthcare Engineering (2015 – 2017) – <i>Guest Instructor</i> | 08/2014 - present |
| Guest Instructor, <i>Radiology and Biomedical Imaging, UCSF Medical Center</i> Subject: PG: BI 240: Musculoskeletal Imaging (2012, 2013) BI 265: Image Processing and Analysis II (2013) | 01/2012 - 12/2013 |
| Graduate Teaching Assistant, <i>Mechanical Engineering, I.I.T. Bombay</i> Subjects: PG: ME 676 Collaborative Engineering (2007, 2008, 2009) ME 659 Manufacturing Processes - II (2007, 2008) UG: ME 336 Introduction to CAD/CAM (2006, 2007, 2008) ME 333 Manufacturing processes - I (2005, 2006, 2007) | 07/2005 - 06/2009 |

STUDENTS

Postdoctoral Scholars

- Rizuwana Parween, PhD 08/2016 – Present
- Muthu Rama Krishnan Mookiah, PhD 04/2016 – Present

PhD Students

- D. Anitha, M.S. (NUS) 09/2015 – Present
- Shriram Duraisamy, M.S. (Duke) 09/2015 – Present

UG Students

- See Wan Yi Faith (SUTD) – Fall Prediction Device 09/2017 – Present
- Loh Yi Lin (SUTD) – UROP – Knee Injury Rehabilitation Device 09/2016 – Present
- Khor Zi Long (SUTD) – UROP – Wearable Spine Posture Measurement device 02/2016 – Present
- Lee Zhi Yong (SUTD) – UROP – Adaptive Feedback Mechanism of Knee Brace 09/2016 – 07/2017
- Koh Zhi Jun (SUTD) – UROP – Knee Injury Rehabilitation Device 09/2016 – 07/2017
- Lim Hoong Ching (SUTD) – UROP – Physical Activity Monitor 05/2016 – 09/2016
- Charmaine Wee Shu Yun (SUTD), IDC UROP Grant 01/2016 – 09/2016

International Research Interns

- Forough Habibollah (Sharif Univ. of Tech) – Intern 07/2016 – 09/2016
- Andrew Hall (MIT) - MISTI Fellow 06/2015 – 08/2015

SERVICE

- Lead, EPD Healthcare Engineering and Design Track 12/2016 – present
- Lead, SUTD-MIT IDC Grant Challenge – Design with Developing World 09/2016 – present
- SUTD Institute Review Board (IRB) Member 02/2015 – present
- SUTD EPD Pillar Development Committee Member 02/2015 – present
- TokyoTech's Cross Border Entrepreneurship Education Program 01/2016 – present
- Scientific Committee Member / Judge – Biomedical Engineering Society Singapore - BES10SM 2017
- *Panel Member* – A*STAR SINGA International Graduate Fellowship 2016; 2017
- *Judge* – Medical Device Design Competition – Biomedical Engineering Society Singapore - BES10SM 2016

AWARDS

- Excellence in Translational Science Award – Journal of Orthopaedic Research (2017)
- Int. Society for Magnetic Resonance in Medicine (ISMRM) Merit Award (2014) – *Magna Cum Laude*
- Int. Society for Magnetic Resonance in Medicine (ISMRM) Merit Award (2013) – *Summa Cum Laude*
- Int. Society for Magnetic Resonance in Medicine (ISMRM) Educational Stipend (2012)
- UCSF Postdoctoral Travel Award (2012)
- IIT Bombay Teaching Assistantship (2005–2009)
- Dept. of Science and Technology *International Travel Award* (2008), ICBME'08, Singapore
- Council of Scientific and Industrial Research *Travel Grant* (2007), IEEE CAD/Graphics, Beijing
- Awarded *MHRD Scholarship* for post graduate studies (2003–2009)
- Secured *All India Rank of 12 (99.36 percentile)* in Graduate Aptitude Test in Engineering (2005)
- *Best Project Award* for the graduation project (2003)

CONSULTING

Advanced Reasoning Technologies (ARTech), Mumbai, India 01/2006 – 12/2008

Metal Casting Design, Simulation, and Optimization

- Involved in design and development of AutoCAST-X (*Casting design, methoding, and simulation software*)
- Designed and developed a 3D thickness analysis and visualisation module.
- Offered casting design analysis training and carried out simulation and optimization of metal castings.

ORGANIZOR (CONFERENCES/ WORKSHOPS ORGANIZED IN TEAM)

- MIT-IDC Workshop on “Co-Design with Developing World” (01/2017)
- Special session on “*Technology Enhanced Learning in Biomedical Engineering*” in EMBEC'17 (06/2017)
- UCSF/UCD Joint workshop on MR Image Processing using MATLAB (01/2014)
- UCSF/UCD workshop on Musculoskeletal Image and Data Analysis (12/2013)
- UCSF/UCD workshop on Quantitative MR Image Analysis for Knee and Hip Joint Cartilage (02/2012)
- CE & QI Programme on Casting Design & Simulation at IIT Bombay (09/ 2009; 07/2008; and 09/2006)
- National workshop on Biomaterials and Medical Implants, IIT Bombay (05/2009)
- Indo-US International Workshop on Tissue Engineering and Biomedical Applications, Bangalore (02/2007)
- Indo-US International Workshop on Rapid Prototyping and Manufacturing, Bangalore (04/2006)
- Distance Education Programme on Casting Design & Analysis at IIT Bombay (09/2005)

INVITED TALKS

- CME for radiographers at Changi General Hospital (11/2016)
- UCSF/UCD workshop on Musculoskeletal Image and Data Analysis, UCSF (12/2013)
- Centre for Biomedical Engineering, *Indian Institute of Technology Delhi* (06/2013)
- ISMRM 21st Annual Meeting, Salt Lake City, Utah (04/2013)
- UCSF/UCD workshop on Quantitative MR Image Analysis for Knee and Hip Joint Cartilage (02/2012)
- UCSF/UCD Seminar on Advanced Musculoskeletal Imaging, Image Processing, and Data Analysis (12/2011)

- IEEE Int. Conference on Automation Science and Engineering (08/2009)
- National workshop on Biomaterials and Medical Implants, IIT Bombay (05/2009)
- IFMBE Int. Conference on Biomedical Engineering, Singapore (12/2008)
- IEEE CAD/Graphics 2007, Beijing, China (10/2007)
- Indo-US International workshop on Tissue Engineering and Biomedical Applications, Bangalore (02/2007)
- Workshop on Medical Applications of Rapid Prototyping, M.I.T. Pune, India (12/2006)
- Indo-US International Workshop on Rapid Prototyping and Manufacturing, Bangalore (04/2006)

REVIEWER (SELECTED INTERNATIONAL JOURNALS)

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| 1. J. Magnetic Resonance Imaging | 10. Int. J. Comp. Assisted Radiology & Surgery |
| 2. J. Medical Physics | 11. Magn. Reson. Mat. Phys. Biol. Med. |
| 3. Journal of Orthopaedic Research | 12. The Knee |
| 4. NMR in Biomedicine | 13. Materials and Manufacturing Processes |
| 5. Osteoarthritis & Cartilage | 14. Int. J. Manufacturing Tech & Management |
| 6. Magnetic Resonance Imaging | 15. Computer Methods Programs in Biomedicine |
| 7. Computerized Medical Imaging and Graphics | 16. Sensors |
| 8. Computers in Biology and Medicine | 17. BMC Musculoskeletal Disorders |
| 9. Imaging Science Journal | 18. BMC Medical Imaging |

PUBLICATIONS

Books

1. **K. Subburaj** (Ed.), “*CT Scanning: Techniques and Applications*,” (2011), InTech, ISBN: 978-953-307-943-1.
2. S. Cukovic, G. Devedzic, F. Pankratz, I. Ghionea, **K. Subburaj**, “Practical Guide to CAD/CAM – Augmented Reality”, (2015) CIRPIS, ISBN 978-86-6335-020-5.

In Refereed International Journals (* Corresponding Author) (Google scholar: No. of Citations: 711; H-Index: 16)

3. D. Shriram, G.P. Kumar, F. Cui, Y.H.D. Lee, **K. Subburaj***, “Evaluating the effects of material properties of artificial meniscal implant in the human knee joint using FEA, *Scientific Reports*, 7 (2017), 6011.
4. M.R.K. Mookiah, T. Baum, K. Mei, F. Kopp, G. Kaissis, P. Foehr, P.B. Noel, J.S. Kirschke, **K. Subburaj***, “Effect of radiation dose reduction on texture measures of trabecular bone microstructure - an in-vitro study,” *Journal of Bone and Mineral Metabolism*, (2017), in press.
5. D. Anitha, T. Baum, J.S. Kirschke, **K. Subburaj***, “Vertebral bone strength assessment in multiple myeloma patients: A finite-element study,” *Medicine*, 96(2), (2017), e5825.
6. D. Anitha, **K. Subburaj***, K. Mei, F. Kopp, P. Foehr, P.B. Noel, J.S. Kirschke, T. Baum, “Effect of radiation dose in CT on finite element model of vertebrae for structural analysis,” *Scientific Reports*, 6, (2016), 38441.
7. G. Mohan, S. Magnitsky, G. Melkus, **K. Subburaj**, G. Kazakia, A.J. Burghardt, A. Dang, N.E. Lane, S. Majumdar, “Kartogenin treatment prevented joint degeneration in a rodent model of osteoarthritis: a pilot study,” *Journal of Orthopaedic Research*, 34(10), (2016), 1780-1789.
8. N.E. Calixto, D. Kumar, **K. Subburaj**, J. Singh, J. Schooler, L. Nardo, X. Li, R.B. Souza, T.M. Link, S. Majumdar, “Zonal differences in meniscus MR relaxation times in response to in vivo static loading in knee osteoarthritis,” *Journal of Orthopaedic Research*, 34(2), (2016), 249-261.
9. S. Cukovic, G. Devedzic, V. Lukovic, N. Anwer, T.Z. Lukovic, **K. Subburaj**, “3D Modeling of Spinal Deformities Shapes using 5th degree B-splines,” *Journal of Production Engineering*, 18(2), (2015), 103-106.
10. C.R. Wyatt, D. Kumar, **K. Subburaj**, S. Lee, L. Nardo, D. Naraynan, D. Lansdown, T.D. Vail, T.M. Link, R.B. Souza, S. Majumdar, “Cartilage T1rho and T2 relaxation times in patients with mild-moderate hip osteoarthritis,” *Arthritis & Rheumatology*, 67(6), (2015), 1548 – 1556.
11. D. Kumar, R.B. Souza, **K. Subburaj**, T.D. MacLeod, L. Nardo, T.M. Link, X. Li, N.E. Lane, S. Majumdar, “Are there sex differences in knee cartilage composition and walking mechanics in healthy and osteoarthritis populations?,” *Clinical Orthopaedics and Related Research*, 473 (8), (2015), 2548-2558. (**Invited article**)

12. D. Lansdown, C. Allen, M. Zaid, S.J. Wu, **K. Subburaj**, R.B. Souza, B.T. Feeley, X. Li, C.B. Ma, “A comprehensive *in vivo* kinematic, quantitative MRI and functional evaluation following ACL reconstruction – a comparison between mini-two incision and anteromedial portal femoral tunnel drilling,” *The Knee*, 22(6), (2015), 547-553.
13. D. Lansdown, M. Zaid, V. Pedroia, **K. Subburaj**, C.B. Ma, R.B. Souza, X. Li, “Reproducibility measurements of three methods for calculating *in vivo* MRI-based knee kinematics,” *Journal of Magnetic Resonance Imaging*, 42(2), (2015), 533-538.
14. **K. Subburaj***, R.B. Souza, B.T. Wyman, M-P. Hellio Le Graverand, T.M. Link, X. Li, S. Majumdar, “Changes in MR relaxation times of the meniscus with acute loading: an *in vivo* pilot study in knee osteoarthritis,” *Journal of Magnetic Resonance Imaging*, 41(2), (2015), 536-543.
15. R.B. Souza, S.J. Wu, L.J. Morse, **K. Subburaj**, C.R. Allen, B.T. Feeley, “Cartilage MRI relaxation times after arthroscopic partial medial meniscectomy reveal localized degeneration,” *Knee Surgery, Sports Traumatology, Arthroscopy*, 23(1), (2015), 188-197..
16. T.D. MacLeod, **K. Subburaj**, S.J. Wu, D. Kumar, C.R. Wyatt, R.B. Souza, “Magnetic resonance analysis of loaded meniscus kinematics: a novel technique comparing persons with and without radiographic knee osteoarthritis,” *Skeletal Radiology*, 44(1), (2015), 125-35.
17. H. Liebl, G. Joseph, M.C. Nevitt, N. Singh, U. Heilmeier, **K. Subburaj**, P.M. Jungmann, C.E. McCulloch, J. Lynch, N.E. Lane, T.M. Link, “Early T₂ changes predict onset of radiographic knee osteoarthritis – Data from the Osteoarthritis Initiative,” *Annals of the Rheumatic Diseases*, 74(7), (2015), 1353-1359.
18. R.B. Souza, D. Kumar, N. Calixto, J. Singh, J. Schooler, **K. Subburaj**, X. Li, T.M. Link, S. Majumdar, “Response of Knee Cartilage T₁rho and T₂ Relaxation Times to *in vivo* Mechanical Loading in Individuals with and without Knee Osteoarthritis,” *Osteoarthritis and Cartilage*, 22(10), (2014), 1367–1376.
19. **K. Subburaj***, A. Valentinitich, A.B. Dillon, G.B. Joseph, X. Li, T.M. Link, T.P. Vail, S. Majumdar, “Regional variations in MR relaxation of hip joint cartilage in subjects with and without femoralacetabular impingement,” *Magnetic Resonance Imaging*, 31(7), (2013), 1129–1136. (**Journal Cover Page**)
20. D. Kumar, **K. Subburaj**, W. Lin, D.C. Karampinos, X. Li, R.B. Souza, T.M. Link, S. Majumdar, “Quadriceps and hamstrings morphology is related to walking mechanics and knee cartilage MR relaxation times in young adults,” *Journal of Orthopaedic and Physical Therapy*, 43(2), (2013) 881-890.
21. R. Ghyar, **K. Subburaj**, B. Ravi, and M.G. Agarwal, “Adaptive probabilistic approach for selecting tumour knee prosthesis”, *Computer Science and Information Systems*, 10(3), (2013), 1407–1428.
22. M.N. Marsh, R.B. Souza, B.T. Wyman, M-P. Hellio Le Graverand, **K. Subburaj**, T.M. Link, S. Majumdar, “Differences between X-ray and MRI-determined knee cartilage thickness in weight-bearing and non-weight-bearing conditions,” *Osteoarthritis and Cartilage*, 21(2), (2013), 1876-1885.
23. A. Valentinitich, D.C. Karampinos, H. Alizai, **K. Subburaj**, D. Kumar, T.M. Link, S. Majumdar, “Automated unsupervised multi-parametric classification of adipose tissue depots in skeletal muscle,” *Journal of Magnetic Resonance Imaging*, 37(4), (2013), 917–927.
24. **K. Subburaj***, D. Kumar, R.B. Souza, H. Alizai, X. Li, T.M. Link, S. Majumdar, “The Acute effect of running on knee articular cartilage and meniscus magnetic resonance relaxation times in young healthy adults,” *American Journal of Sports Medicine*, 40(9), (2012), 2134–2141.
25. G. Devedzic, S. Cukovic, V. Lukovic, D. Milosevic, **K. Subburaj**, T. Lukovic, “ScolioMedIS: Web oriented information system for idiopathic scoliosis visualization and monitoring,” *Computer Methods and Programs in Biomedicine*, 108(2), (2012), 736-749.
26. P.M. Jungmann, X. Li, L. Nardo, **K. Subburaj**, W. Lin, C.B. Ma, S. Majumdar, T.M. Link, “Do cartilage repair procedures prevent degenerative meniscus changes?: longitudinal T₁rho and morphological evaluation at 3.0T,” *American Journal of Sports Medicine*, 40(12), (2012), 2700-2708.
27. **K. Subburaj***, R.B. Souza, C. Stehling, B.T. Wyman, M-P. Hellio Le Graverand, T.M. Link, X. Li, S. Majumdar, “Association of MR relaxation and cartilage deformation in knee osteoarthritis,” *Journal of Orthopaedic Research*, 30(6) (2012), 919–926.
28. A. Kothari, B. Haughom, **K. Subburaj**, B. Feeley, X. Li, C.B. Ma, “Evaluating rotational kinematics of the knee in ACL reconstructed patients using MRI,” *The Knee*, 19(5) (2012), 648–651.

29. N.N. Andrade, S.M.S. Reshamwala, and **K. Subburaj**, "Mandibular reconstruction through transport distraction using an intraoral appliance," *J. Oral Maxillofacial Surgery*, 69(8) (2011), 2260–2269.
30. **K. Subburaj**, B. Ravi, M.G. Agarwal, "Computer-aided methods for assessing lower limb deformities in orthopaedic surgery planning," *Computerized Medical Imaging Graphics*, 34(4) (2010) 277–288.
31. S. Cukovic, G. Devedzic, L. Ivanovic, T.Z. Lukovic, **K. Subburaj**, "Development of 3D kinematic model of spine for idiopathic scoliosis simulation," *Computer Aided Design and Applications*, 7(1) (2010), 153–161.
32. **K. Subburaj**, B. Ravi, M.G. Agarwal, "Automated identification of anatomical landmarks on 3D bone models reconstructed from CT data," *Computerized Medical Imaging Graphics*, 33(5) (2009), 359–368. (Listed among ScienceDirect's Top 25 Hottest Articles published in CMIG journal)
33. **K. Subburaj**, B. Ravi, M.G. Agarwal, "3D shape reasoning for identifying anatomical landmarks," *Computer Aided Design and Applications*, 5(1-4) (2008), 153–160. (Journal Cover Image)
34. Nagahanumaiah, **K. Subburaj**, B. Ravi, "Computer aided rapid tooling process selection and manufacturability evaluation," *Computers in Industry*, 59(2–3) (2008), 262–276.
35. **K. Subburaj**, C. Nair, S. Rajesh, S.M. Meshram, B. Ravi, "Rapid development of auricular prosthesis using CAD and RP technologies," *International J. Oral Maxillofacial Surgery*, 36(10) (2007), 938–943.
36. **K. Subburaj**, S.S. Patil, B. Ravi, "Voxel-based thickness analysis of intricate objects," *International Journal of CAD/CAM*, 6(1) (2006), 105–115.

Refereed International Conferences (Proceedings / Presentations)

37. S. Foong, **K. Subburaj**, K.L. Wood, "An Inductive, Design-Centric Approach to Control Engineering Education with a Competitive Atmosphere," in *Proceedings of the ASME 2017 Dynamic Systems and Control Conference DSCC2017*, Virginia, USA, 11-13, October (2017), *accepted*.
38. V. Srinivasan, B. Song, J. Luo, **K. Subburaj**, RE Mohan, L. Blessing, K.L. Wood, "Investigating Effects of Stimuli on Ideation Outcomes," In *Proceedings of the 21st International Conference on Engineering Design (ICED17)*, Vol. 8: Human Behaviour in Design, Vancouver, Canada, 21-25 August (2017), 309-318.
39. V. Srinivasan, B. Song, J. Luo, **K. Subburaj**, RE Mohan, L. Blessing, K.L. Wood, "Understanding Effect of Analogical Distance on Performance of Ideation: Key Observations and Findings," *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2017)*, Cleveland, Ohio, Aug 6-9, (2017).
40. D. Shriram, R. Parween, Y.H.D. Lee, K. Subburaj, "Effects of counteracting external valgus moment on lateral tibial cartilage contact conditions and tibial rotation," In *proceedings of 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, (2017), 1625 – 1628.
41. D. Shriram, G.V. Praveen Kumar, Y.H.D. Lee, **K. Subburaj**, "Effect of posterior root tear of the lateral meniscus on the articular cartilage during the stance phase of gait cycle: a finite-element study," *XXVI Congress of the International Society of Biomechanics*, Brisbane, Australia, July 23-27, (2017), *accepted*.
42. T. Baum, D Anitha, K. Mei, F.K. Kopp, P. Foehr, P.B. Noel, J.S. Kirschke, **K. Subburaj**, "CT-based bone strength prediction using finite element analysis: how much dose is needed?," *European Congress of Radiology (ECR) 2017*, Vienna, Austria, Mar 1-5, (2017).
43. D. Shriram, G.V. Praveen Kumar, **K. Subburaj**, "Comparing the pressures on the articular cartilage in intact and meniscectomized knee joints using FEA," *16th Int. Conf. Biomedical Engineering (ICBME)*, Singapore, Dec. 7-10, (2016).
44. D. Shriram, **K. Subburaj**, "Development and validation of 3D FE model of the human knee joint for tibio-femoral contact analysis," *16th Int. Conf. Biomedical Engineering (ICBME)*, Singapore, Dec. 7-10, (2016).
45. D. Anitha, T. Baum, J.S. Kirschke, **K. Subburaj**, "Assessment of vertebral strength in multiple myeloma patients: a finite-element study," *16th International Conference on Biomedical Engineering (ICBME)*, Singapore, Dec. 7-10, (2016) .
46. D. Shriram, G.P. Kumar, **K. Subburaj**, "Studying the Effect of Vehicle Collusion on the Articular Cartilage in Intact and Meniscectomized Knee Joint using Finite Element Analysis," *22nd Annual ANZORS Conference*, Melbourne, Australia, Oct. 13-15, (2016), 57.

47. D. Shriram, H. Naghibi Beidokhti, **K. Subburaj**, D. Janssen, N. Verdonshot, "Effects of Total Medial and Lateral Meniscectomies on the Knee Joint Biomechanics during Normal Gait - a Validated 3D Finite Element Method Study," *22nd Annual ANZORS Conference*, Melbourne, Australia, Oct. 13-15, (2016), 115.
48. D. Anitha, T. Baum, J.S. Kirschke, **K. Subburaj**, "Vertebral stability in multiple myeloma patients: a finite-element study," *EORS 24th Annual Meeting*, Bologna, Italy, Sep. 14-16, (2016).
49. S. Cukovic, G. Devedzic, I. Ghionea, M. Fiorentino, **K. Subburaj**, "Engineering design education for industry 4.0: implementation of augmented reality concept in teaching CAD courses," *Int. Conf. on Augmented Reality for Technical Entrepreneurs (ARTE'16)*, Bucharest, Romania, Apr. 1-2, (2016), 11-16.
50. S. Cukovic, V. Lukovic, **K. Subburaj**, W. Birkfellner, D. Milosevic, B. Ristic, G. Devedzic, "Automated SOSORT-recommended Angles Measurement in Patients with Adolescent Idiopathic Scoliosis," *IEEE International Conference on Bioinformatics & Bioengineering*, Belgrade, Serbia, Nov. 2-4, (2015), 18-21.
51. S. Cukovic, G. Devedzic, V. Lukovic, N. Anwer, T.Z. Lukovic, **K. Subburaj**, "3D Modeling of Spinal Deformities Shapes using 5th degree B-splines," *12th International Scientific Conference –MMA 2015: Flexible Technologies*, Novi Sad, Serbia, Sep. 25-26, (2015), 223-226.
52. N.E. Calixto, D. Kumar, **K. Subburaj**, J.S. Singh, J. Schooler, L. Nardo, X. Li, R.B. Souza, T.M. Link, S. Majumdar, "T1rho MRI in Cartilage of Non-Osteoarthritic Knees with and without Posterior Meniscus Lesions," *61st Orthopaedic Research Society (ORS) Annual Meeting*, Las Vegas, USA, Mar 28-31, (2015), 21.
53. C.R. Wyatt, M. Kretschmar, D. Kumar, **K. Subburaj**, S. Lee, T.M. Link, R.B. Souza, S. Majumdar, "Quantitative VTE-T2* Imaging of Hip Labrum," *Proceedings of ISMRM Annual Meeting*, Milan, Italy, May 10-16, (2014), 22, 3988.
54. C.R. Wyatt, D. Kumar, **K. Subburaj**, T. Lian, D. Narayanan, X. Li, T.P. Vail, T.M. Link, R.B. Souza, S. Majumdar, "Hip T1rho and T2 relaxation times in individuals with and without cartilage lesions," *Proceedings of ISMRM Annual Meeting*, Milan, Italy, May 10-16, (2014), 22, 150.
55. M. Zaid, D. Lansdown, **K. Subburaj**, C. B. Ma, R.B. Souza, X. Li, "Development and validation of a novel combined tibial and femoral bone registration method for reliable quantification of MR-based knee joint kinematics," *Proceedings of ISMRM Annual Meeting*, Milan, Italy, May 10-16, (2014), 22, 1170.
56. G. Mohan, G. Melkus, **K. Subburaj**, S. Magnitsky, A. Dang, N.E. Lane, S. Majumdar, "Quantitative T1rho, T2 and T2* mapping of articular cartilage changes in a rat model of osteoarthritis using in vivo high-resolution MRI (7T)," *OARSI World Congress on Osteoarthritis, Paris, France, Apr 24-27, 2014, Osteoarthritis and Cartilage*, 22 (2014), S252-S253.
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