



GENERAL INFORMATION

First and last name	Nenad Filipovic
Year and place of birth	1970, Kragujevac
Position	Professor
e-mail/web site	fica@kg.ac.rs
Telephone	+381-34-334-379
Education-scientific / education –art field	Technical science
University, faculty, organizational unit	University of Kragujevac/ Faculty of Mechanical Engineering
Field and closer speciality	Biomedical Engineering

EDUCATION – DIPLOMAS

BACHELOR STUDIES	
Year	1994
Place	Kragujevac
Institution	Faculty of Mechanical Engineering
Headline of BSC	Automatically mesh generation for finite element method
Field	Computer calculations
PHD THESIS	
Year	1999
Place	Kragujevac
Institution	Faculty of Mechanical Engineering
Title of PHD thesis	Numerical solution of coupled problems: deformable solid and fluid flow
Field	Computer calculations

TECHNICAL BIOGRAPHY – POSITIONS

Year	Position
Research Assistant	1994
Assistant Professor	2000
Associate Professor	2005
Full Professor	2010

PROFESSIONAL BIOGRAPHY - IMPROVEMENTS

(training in the country and abroad, study courses, a visiting professor)

Year and duration	Scholarships - study abroad:
2001, 2 months	University of Vienna, Austria
2003-2010	Harvard University, USA

AWARDS AND RECOGNITIONS

Year	Name of award/recognition
2003	Young Scientist Award at the Second MIT Conference on Computational Fluid & Solid Mechanics, (Ed. K.J. Bathe), Boston, USA.

RESULTS OF SCIENTIFIC AND RESEARCH WORK

M11

1. **N Filipovic**, Computational modeling in bioengineering and bioinformatics, Academic Press, no.of pages: 442, ISBN: 978-0-128-19583-3, 2019
2. Rakocevic G., Djukic T., **Filipovic N.**, Milutinovic V.,(Editors) Computational Medicine in Data Mining and Modeling, Springer, br. Str. 376, ISBN 978-1-4614-8784-5, 2013
3. Kojic M, **Filipovic N**, Stojanovic B, Kojic N, Computer Modeling in Bioengineering: Theoretical Background, Examples and Software., John Wiley and Sons, no.of pages: 446, ISBN 978-0-470-75175-6., Chichester, England., 2008

M13

1. Tijana Sustersic, Aleksandra Vulovic, Nemanja Trifunovic, Ivan Milankovic, **Nenad Filipovic** (2019) Face Recognition Using Maxeler DataFlow, Exploring the DataFlow Supercomputing Paradigm, In: Milutinovic V., Kotlar M. (eds) Exploring the DataFlow Supercomputing Paradigm. Computer Communications and Networks. Springer, Cham, pp 171-196, ISBN: 978-3-030-13802-8
2. Peulic A.S., Milankovic I., Mijailovic N.V., **Filipovic N.** (2019) Biomedical Images Processing Using Maxeler DataFlow Engines. In: Milutinovic V., Kotlar M. (eds) Exploring the DataFlow Supercomputing Paradigm. Computer Communications and Networks. Springer, Cham, pp 197-227, ISBN: 978-3-030-13802-8
3. **Nenad Filipovic** (2019) Computational modeling of atherosclerosis. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 1-39,ISBN: 978-0-128-19583-3
4. Dalibor D. Nikolic, **Nenad Filipovic** (2019) Topological and parametric optimization of stent design - numerical methods. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 69-103,ISBN: 978-0-128-19583-3
5. Milica Nikolic, **Nenad Filipovic** (2019) Lab-on-a-chip and epithelial lung cells modeling. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 105-135, ISBN: 978-0-128-19583-3
6. Igor B. Saveljic, **Nenad Filipovic** (2019) Aortic Dissection: Numerical Modeling, Virtual Surgery. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 137-178, ISBN: 978-0-128-19583-3
7. Aleksandra Vulović, **Nenad Filipovic** (2019) The biomechanics of lower human extremities. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 179-210, ISBN: 978-0-128-19583-3
8. Tijana Šušteršič, **Nenad Filipovic** (2019) Computational modelling of dry powder inhalers for pulmonary drug delivery. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 257-288, ISBN: 978-0-128-19583-3
9. Velibor Isailovic, **Nenad Filipovic** (2019) Computer modeling of cochlea mechanics. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 289-319, ISBN: 978-0-128-19583-3
10. Tijana Đukić, **Nenad Filipovic** (2019) Numerical modeling of cell separation in microfluidic chips. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 321-352, ISBN: 978-0-128-19583-3
11. Smiljana Djorovic, **Nenad Filipovic** (2019) Computational analysis of abdominal aortic aneurysm before and after endovascular aneurysm repair. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 353-386, ISBN: 978-0-128-19583-3
12. Radivoje Radakovic, **Nenad Filipovic** (2019) Sports biomechanics. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 387-418, ISBN: 978-0-128-19583-3
13. **N. Filipovic**, Modeling the behavior of smart composite materials, Smart Composite Coatings and Membranes, Editor Montemor M. F., Transport, Structural, Enviromental and Energy Applications, pp 61-81, ISBN 978-1-78242-283-9, 2016

M14

1. **Filipovic N.**, Kojic M., Tsuda A., Multiscale Modeling of Thrombosis by Finite Element (FE) and Dissipative Particle Dynamics (DPD) in the Large Arteries, *Advanced Topics in Scattering and Biomedical Engineering*, Editors: Charalambopoulos A., Fotiadis D. I., Polyzos D., World Scientific, pp 269-281, ISBN -13- 978-981-281-484-5, 2007

M21a и M21

1. Andreas S Panayides, Amir Amini, **Nenad D Filipovic**, Ashish Sharma, Sotirios A Tsaftaris, Alistair Young, David Foran, Nhan Do, Spyretta Golemati, Tahsin Kurc, Kun Huang, Konstantina S Nikita, Ben P Veasey, Michalis Zervakis, Joel H Saltz, Constantinos S Pattichis, *AI in Medical Imaging Informatics: Current Challenges and Future Directions*, *IEEE Journal of Biomedical and Health Informatics*, Vol.24, No.7, pp 1837 - 1857, ISSN 2168-2194, Doi 10.1109/JBHI.2020.2991043, 2020
2. DZ Milasinovic, AM Vukicevic, **ND Filipovic**, dfemtoolz: An open-source C++ framework for efficient imposition of material and boundary conditions in finite element biomedical simulations, *Computer Physics Communications*, Vol.249, No.-, pp-, ISSN 0010-4655, Doi 10.1016/j.cpc.2019.106996, 2020
3. S Karthik, T Djukic, JD Kim, B Zuber, A Makanya, A Odriozola, **N Filipovic**, Publisher Correction: Synergistic interaction of sprouting and intussusceptive angiogenesis during zebrafish caudal vein plexus development *Scientific Reports*, Vol.9, No.-, p.p. 1-1, ISSN 2045-2322, Doi 10.1038/s41598-018-36663-y, 2019
4. M Madzarevic, D Medarevic, A Vulovic, T Sustersic, J Djuris, **N Filipovic** Optimization and Prediction of Ibuprofen Release from 3D DLP Printlets Using Artificial Neural Networks, *Pharmaceutics*, Vol.11, No.10, p.p. 544, ISSN 1999-4923, Doi 10.3390/pharmaceutics11100544, 2019
5. T Djukic, I Saveljic, **N Filipovic**, Numerical modeling of the motion of otoconia particles in the patient-specific semicircular canal, *Computational Particle Mechanics*, Vol.6, No.4, p.p. 767-780, ISSN 0010-4825, Doi 10.1007/s40571-019-00260-1, 2019
6. AM Vukicevic, V Milic, A Zabotti, A Hocevar, O Di Lucia, G Filippou, **N Filipovic** Radiomics-based assessment of Primary Sjogren's Syndrome from salivary gland ultrasonography images, *IEEE journal of biomedical and health informatics*, Vol.24, No.3, p.p. 835-843, ISSN 2168-2194, Doi 10.1109/JBHI.2019.2923773, 2019
7. B Jeremić, G Ozyigit, P Dubinsky, **N Filipović** Importance of Hpv Positivity in Squamous Cell Head and Neck Cancer. *Turkish Journal of Oncology/Türk Onkoloji Dergisi*, Vol.34, No.3, p.p.-, ISSN 1300-7467, Doi 10.5505/tjo.2019.2079, 2019
8. B Jeremic, Pavol Dubinsky, N Filipovic, G Ozyigit, Optimal Administration Frequency of Cisplatin Concurrently With Radical Radiotherapy in the Definitive Treatment of Locally Advanced, Inoperable Squamous Cell Cancer of the Head and Neck. Still Obscured by Clouds? *Turkish Journal of Oncology/Türk Onkoloji Dergisi*, Vol.34, No.2, p.p.133-6, ISSN 1300-7467, Doi 10.5505/tjo.2019.2015, 2019
9. M Kojic, M Milosevic, V Simic, V Geroski, A Ziemys, **N Filipovic**, M Ferrari Smeared multiscale finite element model for electrophysiology and ionic transport in biological tissue, *Computers in biology and medicine*, Vol.108, No.-, p.p.288-304, ISSN 0010-4825, Doi 10.1016/j.combiomed.2019.03.023, 2019
10. R Miković, B Arsić, Đ Gligorijević, M Gačić, D Petrović, **N Filipović**, The Influence of Social Capital on Knowledge Management Maturity of Nonprofit Organizations—Predictive Modelling Based on a Multilevel Analysis, *IEEE Access*, Vol. 7, No.-, pp 47929-47943, ISSN 2169-3536, Doi: 10.1109/ACCESS.2019.2909812, 2019
11. T Djukic, I Saveljic, G Pelosi, O Parodi, **N Filipovic**, Numerical simulation of stent deployment within patient-specific artery and its validation against clinical data, *Computer methods and programs in biomedicine*, Vol. 175, No.-, pp 121-127, ISSN 0169-2607, Doi: 10.1016/j.cmpb.2019.04.005, 2019
12. T Djukic, Igor Saveljic, **N Filipovic**, Numerical modeling of the motion of otoconia particles in the patient-specific semicircular canal, *Computational Particle Mechanics*, Vol. 6, No.4, pp 767-780, ISSN 2196-4378, Doi: 10.1007/s40571-019-00260-1, 2019

13. Devauchelle-Pensec, A Zabotti, G Carvajal-Alegria, **N Filipovic** Salivary gland ultrasonography in primary Sjögren's syndrome: opportunities and challenges, *Rheumatology*, Doi: doi.org/10.1093/rheumatology/kez079, 2019
14. T Sustersic, L Liverani, AR Boccaccini, S Savic, A Janicijevic, **N Filipovic** Numerical simulation of electrospinning process in commercial and in-house software PAK, *Materials Research Express*, Vol. 6, No.2, pp-, ISSN 2053-1591, Doi: 10.1088/2053-1591/aaeb08, 2019
15. M Kojic, M Milosevic, V Simic, B Milicevic, V Geroski, S Nizzero, A Ziemys, **N Filipovic**, M Ferrari, Smearred multiscale finite element models for mass transport and electrophysiology coupled to muscle mechanics, *Frontiers in bioengineering and biotechnology*, Vol.7, No.-, pp 381, ISSN 2296-4185, Doi 10.3389/fbioe.2019.00381, 2019
16. R Vulović, M Nikolić, **N Filipović**, Smart platform for the analysis of cupula deformation caused by otoconia presence within SCCs, *Computer methods in biomechanics and biomedical engineering*, Vol.22, No.2, pp 130-138, ISSN 1025-5842, Doi 10.1080/10255842.2018.1539166, 2019
17. P Koullapis, Stavros C Kassinos, J Muela, C Perez-Segarra, J Rigola, Oriol Lehmkuhl, Y Cui, M Sommerfeld, J Elcner, M Jicha, I Saveljic, **N Filipovic**, F Lizal, L Nicolaou, Regional aerosol deposition in the human airways: The SimInhale benchmark case and a critical assessment of in silico methods, *European Journal of Pharmaceutical Sciences*, Vol.113, No.-, pp 77-94, ISSN 0928-0987, Doi 10.1016/j.ejps.2017.09.003, 2018
18. Tijana Djukic, Jun-Dae Kim, Benoît Zuber, Andrew Makanya, Adolfo Odriozola, Ruslan Hlushchuk, **Nenad Filipovic**, Suk Won Jin, Valentin Djonov, Synergistic interaction of sprouting and intussusceptive angiogenesis during zebrafish caudal vein plexus development, *Scientific reports*, Vol.8, No.1, pp 1-15, ISSN 2045-2322, Doi 10.1038/s41598-018-27791-6, 2018
19. Aleksandra Vulović, Tijana Šušteršič, Sandra Cvijić, Svetlana Ibrić, **Nenad Filipović**, *European Journal of Pharmaceutical Sciences*, Vol.113, No.-, pp 171-184, ISSN 0928-0987, Doi 10.1016/j.ejps.2017.10.022, 2018
20. Marko Robnik-Šikonja, Miloš Radović, Smiljana Đorović, Bojana Anđelković-Ćirković, **Nenad Filipović**, Modeling ischemia with finite elements and automated machine learning, *Journal of Computational Science*, Vol.29, No.-, pp 99-106, ISSN 1877-7503, Doi 10.1016/j.jocs.2018.09.017, 2018
21. Arso M Vukicevic, Serkan Çimen, Nikola Jagic, Gordana Jovicic, Alejandro F Frangi, **Nenad Filipovic**, Three-dimensional reconstruction and NURBS-based structured meshing of coronary arteries from the conventional X-ray angiography projection images, *Scientific reports*, Vol.8, No.1, pp 1-20, ISSN 2045-2322, Doi 10.1038/s41598-018-19440-9, 2018
22. Milica Nikolic, Tijana Sustersic, **Nenad Filipovic**, In vitro models and on-chip systems: Biomaterial interaction studies with tissues generated using lung epithelial and liver metabolic cell lines, *Frontiers in bioengineering and biotechnology*, Vol.6, No.-, pp 120, ISSN 2296-4185, Doi 10.3389/fbioe.2018.00120, 2018
23. Danijela M Cvetković, Marko N Živanović, Milena G Milutinović, Tijana R Djukić, Miloš D Radović, Aleksandar M Cvetković, **Nenad D Filipović**, Nebojša D Zdravković, Real-time monitoring of cytotoxic effects of electroporation on breast and colon cancer cell lines, *Bioelectrochemistry*, Vol.113, No.-, pp 85-94, ISSN 1567-5394, Doi 10.1016/j.bioelechem.2016.10.005, 2017
24. M Radovic, M Ghalwash, **N Filipovic**, Z Obradovic, Minimum redundancy maximum relevance feature selection approach for temporal gene expression data, *BMC bioinformatics*, 18 (9), 1-14, ISSN 1471-2105, Doi 10.1186/s12859-016-1423-9, 2017
25. Srbislav S Pajic, Svetlana Antic, Arso M Vukicevic, Nenad Djordjevic, Gordana Jovicic, Zivorad Savic, Igor Saveljic, Aleksa Janović, Zoran Pesic, Marija Djuric, **Nenad Filipovic**, Trauma of the frontal region is influenced by the volume of frontal sinuses. A finite element study, *Frontiers in physiology* Vol. 8, pp 493, ISSN 1664-042X, Doi 10.3389/fphys.2017.00493, 2017
26. Branislav Jeremic, Antonio Gomez-Caamano, Pavol Dubinsky, Nikola Cihoric, Frances Casas, **Nenad Filipovic**, *Frontiers in oncology*, Vol.7, pp 169, ISSN 2234-943X, Doi 10.3389/fonc.2017.00169, 2017
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pp -, ISSN 1932-6203, Doi 10.1371/journal.pone.0150948, 2016

28. Cihoric Nikola Tsikkinis Alexandros **Filipovic Nenad** Jeremic Branislav, Treatment options for isolated locoregional recurrences of nonsmall cell lung cancer after surgery: yes, radiation therapy too!, *European Respiratory Journal*, Vol.48, No.1, pp 276-278, ISSN 0903-1936, Doi 10.1183/13993003.00388-2016, 2016
29. Djukic TR, Karthik S, Saveljic I, Djonov V and **Filipovic N**, Modeling the Behavior of Red Blood Cells within the Caudal Vein Plexus of Zebrafish, *Frontiers in Physiology*, Vol.7, No.455, pp -, ISSN 1664-042, Doi 10.3389/fphys.2016.00455, 2016
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39. AM Cvetkovic, DZ Milasinovic, AS Peulic, NV Mijailovic, **ND Filipovic**, Numerical and experimental analysis of factors leading to suture dehiscence after Billroth II gastric resection, *Computer methods and programs in biomedicine*, Vol.117, No.2, pp 71-79, ISSN 0169-2607, Doi 10.1016/j.cmpb.2014.08.005, 2014
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41. D Nikolić, M Radović, S Aleksandrić, M Tomašević, **N Filipović**, Prediction of coronary plaque location on arteries having myocardial bridge, using finite element models, *Computer methods and*

- programs in biomedicine, Vol.117, No.2, pp 137-144, ISSN 0169-2607, Doi 10.1016/j.cmpb.2014.07.012, 2014
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 45. Janovic Aleksa, Milovanovic Petar, Saveljic Igor, Nikolic Dalibor, Hahn Michael, Rakocevic Zoran B, **Filipovic Nenad D**, Amling Michael, Busse Bjoern, Djuric Marija P, Microstructural properties of the mid-facial bones in relation to the distribution of occlusal loading, *Bone*, Vol.68, No.1, pp 108-114, ISSN 8756-3282, Doi 10.1016/j.bone.2014.07.032, 2014
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Ongoing Research Support

H2020- SC1-PM-16–2017 PI: Filipovic In EU, 01/10/2020-30/09/2023
SGABU: Increasing scientific, technological and innovation capacity of Serbia as a Widening country in the domain of multiscale modelling and medical informatics in biomedical engineering
Role: Coordinator

H2020-NMBP-2016-2017 PI: Vrana In EU, 01/01/2018-31/12/2021
PANBioRA: Personalised and/or Generalised Integrated Biomaterial Risk Assessment
Role: Co-investigator

H2020-SC1-2017-CNECT-2 PI: Filipovic In EU, 01/06/2018-30/11/2021
SilicoFCM: In Silico trials for drug tracing the effects of sarcomeric protein mutations leading to familial cardiomyopathy
Role: Coordinator

H2020- SC1-PM-16–2017 PI: Fotiadis In EU, 01/11/2017-31/10/2020
InSilc: In-silico trials for developing and assessing biomedical products
Role: Co-investigator

H2020-SC1-2016-2017 PI: Fotiadis In EU, 01/12/2017-31/11/2020
HOLOBALANCE: HOLOgrams for personalised virtual coaching and motivation in an ageing population with BALANCE disorders
Role: Co-investigator

H2020- C1-PM-02–2017 PI: Fotiadis In EU, 01/12/2017-31/11/2020
TAXINOMISIS: A multidisciplinary approach for the stratification of patients with carotid artery disease
Role: Co-investigator

Erasmus+KA2/2016 PI: Ivanovic In EU, 01/10/2017-30/09/2020
Improving Academic and Professional Education Capacity in Serbia in the area of Safety & Security (by means of strategic partnership with the EU) / ImprESS
Role: Co-investigator

Completed Research Support

H2020-SC1-2016-2017 PI: Tzioufas In EU, 01/01/17-30/06/20
HarmonicSS: HARMONization and integrative analysis of regional, national and international Cohorts on primary Sjögren's Syndrome (pSS) towards improved stratification, treatment and health policy making
Role: Co-investigator

III41007 Serbian national project PI: Filipovic In Serbia, 01/01/11-12/31/19
Applied of biomedical engineering in the pre-clinical and clinical practice
Role: PI

H2020-PHC-2015-single-stage PI: Parodi In EU, 01/01/16-30/06/19
SMARTool: Simulation Modeling of coronary ARTery disease: a tool for clinical decision support
Role: Co-investigator

SCOPES Joint Research Project PI: Filipovic In EU, 01/09/14-01/09/18
Role of blood flow and sdf-1/cxcr4–induced recruitment of mononuclear cells in intussusceptive angiogenesis

Role: Coordinator of the Serbian side of the project

FP7-ICT-2013-10 PI: Luxon In EU, 01/12/13-30/11/16
EMBalance: A Decision Support System incorporating a validated patient-specific, multi-scale Balance
Hypermodel towards early diagnostic Evaluation and efficient Management plan formulation of Balance
Disorders
Role: Co-investigator

FP7 ICT-2011.5.2 PI: Sahay In EU, 01/02/13-31/01/16
SIFEM: Semantic Infostructure interlinking an open source Finite Element tool and libraries with a model
repository for the multi-scale Modelling and 3d visualization of the inner-ear
Role: Co-investigator

SCOPEs Institutional partnership PI: Filipovic In EU, 01/06/12-31/05/15
Computational modeling of blood flow in the tumor vasculature
Role: Coordinator of the Serbian side of the project

FP7-NMP-2011-CSA-5 PI: Basista In EU, 01/02/12-31/01/15
INN-VIN: Innovative materials solutions for Transport, Energy and Biomedical sectors by strengthening
integration and enhancing research dynamics of KMM-VIN
Role: Co-investigator

FP7- ICT IP-224297 PI: Parodi In EU, 09/01/08-08/31/13
ARTreat: Multi-level patient-specific artery and atherogenesis model for outcome prediction, decision support
treatment, and virtual hand-on training.
Role: Co-Investigator, Scientific coordinator

Serbian National Project PI: Filipovic In Serbia, 2012-2013
Development of a software-hardware system for biomechanical analysis of athletes
Role: PI

FP7 Project-NMP-2007-LARGE-1 PI: Hack In EU, 09/01/08-08/31/13
Multifunctional materials for future vehicles, MUST
Role: Co-Investigator, coordinator for modeling