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| **Name:** | Nikola Vitković |
| **Position for this Contract:** | Project lead |
| **Nationality:**  | Serbian |
| **Contact information:** | Email:nikola.vitkovich@gmail.com, nikola.vitkovic@masfak.ni.ac.rsPhone: +381641177784 |
| **Countries of Work Experience:** | Serbia |
| **Language Skills:** | English |
| **Educational and Other Qualifications:** | **Current position -** Head of the Information System at the Faculty of Mechanical Engineering**2021 - Associate professor** at Faculty of Mechanical Engineering, University of Nis.**2017 - Head** of Innovation Center for development and application of Information Technologies (ICIT) at the Faculty of Mechanical Engineering, University of Nis.**2017 - Assistant professor** at Faculty of Mechanical Engineering, University of Nis.**2016 - PhD - Doctor of Science** in Mechanical Engineering.**2009** **– Research and teaching assistant** at Faculty of Mechanical Engineering, University of Nis.**2007** **–** **Researcher** at Innovation Center for development and application of Information Technologies (ICIT).**2004 - AQUIT-Project** (education, qualification, and certification of Serbian IT experts): Quality management in IT Projects, Java provided by Steinbeis-Transferzentrum, Deutsche Investitions und Entwicklungsgesellschaft. **2002 – Scholar** funded by Ministry of Science and Technological Development, Republic of Serbia.**2001 – BSc** in Mechanical Engineering at Faculty of Mechanical Engineering, University of Nis. |
| **Summary of Experience:** **CAREER SUMMARY** * Lecturing and training: twenty years of teaching at University and training for industry customers and public institutions (mainly CAD/CAM and other Information technologies: Information systems and programming – Java, PHP, C++, C#, databases, software development);
* Business: 30 years of developing various software solutions (e.g., web and desktop applications in Java, PHP, C++, C#); fifteen years of product design and manufacturing
* Research: twenty years of research experience in information-communication technologies (ICT), applied artificial intelligence, biomedical engineering, and production engineering. Current research interests are:
* Development of VR, AR, and Mixed reality applications
* Development of software applications (Java, PHP, C#, databases)
* Application of Artificial intelligence (neural networks, optimization, interpolation, deep learning methods) in production systems and biomedical engineering
* Application of Information-communication technologies in biomedical engineering and production systems
* Projects: Participated in realizing many scientific and R&D projects supported by the Serbian government and industry. As a researcher and application developer, he has engaged in projects funded by the European Union (FP6, FP7, H2020, TEMPUS, ERASMUS).

**EXPERTISE*** Biomedical Engineering
* Computer-aided product development systems (CAD/CAE/CAPP/CAM) focusing on computer-aided design and manufacturing.
* Creating Virtual Reality applications (VR/AR and Mixed Reality)
* Artificial intelligence and its application in knowledge-based engineering systems.
* Manufacturing and production systems.
* Reverse engineering/modeling.
* Information systems
* Computer graphics and programming (C#, C++, Java, PHP, JavaScript)
* Web development – Full Stack developer (Front and Back end)

SOCIAL Activities:* Member of the Jedi movement
* Conducting free IT training for kids and socially vulnerable
* Member of "Borani za Bor" humanitarian group
* Cycling, running, playing football and basketball
* Handball player.
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| Relevant Experience (From most recent): |
| **Period: From – To** | **Name of activity/ Project/ funding organisation, if applicable:** | **Job Title and Activities undertaken/Description of actual role performed:**  |
| *2024 - 2027* | **CHRONOWOUND - Multilevel approach to study chronic wounds based on clinical and biological assessment with development of novel personalized therapeutic approaches using in vitro and in vivo experimental models** | Coordinator for Mechanical Engineering Faculty in Nis – AI and Software Developer |
| *2023 - 2026* | **XMAN - Extended Reality for Machine Tool Training** | Creator of the Virtual assets and software (VR/AR) |
| *2024 - 2027* | **BIOMEDIX - Biomedical Innovations through Digital Transformation of****Additive Technologies and Knowledge Exchange** | Project Coordinator for Serbia – Creating Virtual Reality courses, instruction manuals, and software. |
| *2024 - 2027* | **SHINE - Strategic Higher-education Initiative for Networking and****Engineering: Innovative Concurrent Engineering****Methodologies and Teaching Scenarios** | Project Coordinator for Serbia – Courses Creator, Software Developer, Methodology developer |
| *2022 - 2025* | **CALLME ERASMUS+ project –Collaborative e-platform for innovation and educational enhancement in medical engineering** | Project coordinator for Serbia and Data analyst, Content provider, Course Creator with VR/AR support, Web Developer |
|  *2022 - 2024* | **DIN-ECO - Boosting Digital Innovation and Transformation Capacity of HEIs in an Entrepreneurial ecosystem - DIN-ECO creates links between digital innovation and research in the health and manufacturing industries** | Project coordinator for Serbia and Course Creator, Web Developer |
| *2019 - current* | **RoboShepard project – Heard guiding** | Team leader and senior developer |
| *2017 - 2019* | **Smart Automation of Rail Transport, H2020 Project, Founded by European Commission, Project reference – 730836** | Project manager and team leader for the creation of application (web and desktop) for the visualization and optimisation of the freight transport (Java, python, React, D3, MySQL).  |
| *2010 – 2021* | **VIHOS - Towards Virtual Physiological Human, National project funded by Ministry for Education, Science and Technological Development of Republic of Serbia** | Project team leader for developing Software for the simulation of orthopaedic intervention (Java, C#, WebGL) and for creating geometrical models of human bones and other tissue. |
| *2017 - 2021* | **Assistant professor, Faculty of Mechanical Engineering University of Niš, Republic of Serbia** | Information-Communication technologies, Information systems, OOP and functional programming, Databases, CAD/CAM, Reverse engineering, Biomedical Engineering |
| *2012 - 2016* | **Studies in Bioengineering and Medical Informatics, BIOEMIS, TEMPUS project, Founded by European Commission, Project reference 530423-2012** | Project manager for the creation of syllabus for medical informatics and biomedical engineering subjects for master programme at University of Nis. |

**Relevant Research Papers**

1. Mitić, Jelena, Nikola Vitković, Miroslav Trajanović, Filip Górski, Ancuţa Păcurar, Cristina Borzan, Emilia Sabău, and Răzvan Păcurar. 2024. "Utilizing Artificial Neural Networks for Geometric Bone Model Reconstruction in Mandibular Prognathism Patients" *Mathematics* 12, no. 10: 1577. <https://doi.org/10.3390/math12101577>
2. Vitkovic, Nikola & Trajanovic, Miroslav & Barać, Milica & Trifunović, Milan & R. Stojković Ex Milovanović, Jelena & Stan, Sergiu-Dan & Pacurar, Razvan. (2024). Novel Approach for Education in Biomedical Engineering Based on Atomic Learning. 279-287. 10.1007/978-3-031-50755-7\_26.
3. Vitković, Nikola, Jelena R. Stojković, Nikola Korunović, Emil Teuţan, Alin Pleşa, Alexandru Ianoşi-Andreeva-Dimitrova, Filip Górski, and Răzvan Păcurar. 2023. "Extra-Articular Distal Humerus Plate 3D Model Creation by Using the Method of Anatomical Features" Materials 16, no. 15: 5409. <https://doi.org/10.3390/ma16155409>
4. Stojković, Jelena R., Rajko Turudija, Nikola Vitković, Filip Górski, Ancuţa Păcurar, Alin Pleşa, Alexandru Ianoşi-Andreeva-Dimitrova, and Răzvan Păcurar. 2023. "An Experimental Study on the Impact of Layer Height and Annealing Parameters on the Tensile Strength and Dimensional Accuracy of FDM 3D Printed Parts" Materials 16, no. 13: 4574. https://doi.org/10.3390/ma16134574
5. Vitković, N., Mladenović, S., Trifunović, M., et al.: Software framework for the creation and application of personalized bone and plate implant geometrical models. J. Healthcare Eng. Article ID 6025935, 11 (2018)