

# Stefan Milosevic

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**Memberships:** ASCO, ESMO, AACR, IEEE EMBS, BiRBI

## Experience

### BIO4 Campus (*The Government of Serbia*) - Belgrade, Serbia

Nov 2024 – Present

*AI (life sciences) Lead*

- **Lead** AI and ML strategy for a national-scale innovation ecosystem serving **2,500+** researchers and clinicians
- **Architect** and **deploy** distributed AI/ML and data-interoperability systems connecting **16** institutions, standardizing pipelines across **7** faculties, **9** scientific institutes, and **12** ongoing research programs
- **Provide** influence-based **technical** leadership across **80-120** researchers, engineers, clinicians, and HPC specialists, enabling cross-functional adoption of AI/ML best practices and data standards
- **Support** and **accelerate** high-impact biomedical AI projects, including **6+** active NGS/multiomic workflows at the Bioengineering Institute (IMGGE) and **10+** clinical/diagnostic ML initiatives with the Institute for AI
- **Secured** 3 new industry partners (MultiOmic Health, Alloy Therapeutics, EPAM Systems) and expanded on 3 existing pharmaceutical partnerships (AstraZeneca, Roche, Merck), supporting multiple clinical research programs through AI and data engineering
- **Enable** national-scale compute access by connecting **2** major research institutes to Serbia's HPC data center and supporting **4** ML/HPC workloads (sequencing analysis, multimodal modeling, automation pipelines)  
**Built and ran the BIO4 HPC Workshop end-to-end, culminating in a technical MoU with EPAM, training 55 researchers, and assembling speakers from the Office for IT and eGovernment, C4IR, IMGGE, and NVIDIA**

### University of Cambridge - Cambridge, United Kingdom

Aug 2024 – March 2025

*Visiting Postgraduate Researcher*

- **Developed a Graph Neural Network framework** to analyze single cell multiomic data from the Human Heart Atlas, enhancing predictive insights into gene interactions and driving discoveries in tumor therapies and personalized medicine applications
- **Member** of the Department of Computer Science and Technology

### Cambridge Centre for AI in Medicine - Cambridge, United Kingdom

Oct 2023 – Aug 2024

*Graduate Researcher*

- **Developed** a single-cell multiomic analysis tool using Graph Neural Networks (GNNs), achieving an R-Squared of **0.8** on key genes, and presented findings at Wellcome Sanger Institute & Dept. of Computer Science
- **Co-led** development of a music popularity prediction model using EEG data, leveraging Temporal Graph Networks & DL
- **Optimized** ML compilers for large-scale data processing and applied PyTorch for advanced medical image segmentation, enhancing AI-driven diagnostics

### BlueGrid.io – Belgrade, Serbia

June 2022 – June 2023

*Python Software Engineer & Data Scientist*

- **Led the development and integration of an AI-driven risk management system**, created custom risk rules that identified exposed ports and vulnerabilities for clients, while integrating data from various third-party sources
- **Designed scalable and secure data pipelines** for Krypton's Health Wallet web application, while developing Python scripts to automate data validation, allowing clients to efficiently manage and analyze their health records
- **Continued development** on the backend functionalities of the user platform for American client that resulted in a 1<sup>st</sup> place finish in Chainlink's Hackathon, contributing to the companies seed round funding

### Microsoft - Belgrade, Serbia

Oct 2021 – Mar 2022

*Data Science (Internship)*

- **Developed and implemented data analysis** pipelines using Python, SQL, and Microsoft Azure, optimizing data cleaning and transformation processes to support A/B testing and improve decision-making across various projects
- **Delivered efficiency through data collection and actionable insights** to senior management, leveraging data science techniques and analytics

### Institute of Oncology Ljubljana & Jožef Stefan Institute – Ljubljana, Slovenia

Dec 2020 – May 2023

*Technical Team (Internship)*

- **Conducted advanced data analyses** leveraging tools for medical imaging techniques (MRI/X-Ray DICOM scans) to extract actionable insights, significantly contributing to the Institutes oncology drug development
- **Co-organized the Fourth Regional Congress of Medical Oncology (REKONIO 2023)**
- **Built** a decision-support tool integrating patient data with medical guidelines for personalized therapy

## Education

### University of Belgrade – Belgrade, Serbia

Oct 2024

- PhD in Artificial Intelligence (Medical Sciences & Biomedical Informatics). 1<sup>st</sup> Ranked. Not Pursued.
- Thesis: Multi-Modal GNN for Neuro-Oncology: Digital Twin Modeling of CNS Tumor Evolution and Therapy Responses
- National PhD full-ride Scholarship, Visiting PhD Postgraduate (**University of Cambridge**)

### University of Cambridge - Cambridge, United Kingdom

Oct 2023 – June 2024

- MPhil in Advanced Computer Science (Churchill College) - Wellcome Sanger Institute Collaboration
- Thesis: scMultiGraph: single-cell Multiomic Modelling with Message Passing Graph Neural Networks
- Grade: Distinction; FCDO Chevening Scholarship and The Cambridge Trust Scholarship Recipient

### Singidunum University - Belgrade, Serbia

Nov 2022 – July 2023

- MSc in Data Science (Computational Biology)
- Thesis: Improving Melanoma Detection through Enhanced Data Exploration, Image Augmentation and Deep Neural Networks
- Grade: 4.00 GPA and Best MSc Thesis Award

### Singidunum University - Belgrade, Serbia

Oct 2018 – July 2022

- BSc (Hons) in Computer Science, University of Belgrade Faculty of Electrical Engineering (Attended Online Core Courses)
- Thesis: Sport Analytics Using Statistical Data Visualization
- *Google Developer Group on Campus · University of Belgrade*
- Grade: 4.00 GPA and Best BSc Thesis Award

## Publications, Conferences, Talks

1. **Optimizing Convolutional Neural Network by Hybridized Elephant Herding Optimization Algorithm for Magnetic Resonance Image Classification of Glioma Brain Tumour Grade.** Proceedings with the Zinc 2021. Springer, IEEE. Conference: Zinc 2021 <https://ieeexplore.ieee.org/document/9499297>
2. **Multi-layer Perceptron Training by Genetic Algorithms.** Proceedings of Sinteza 2020. Springer, ICMCSI. Conference: Sinteza 2020. [https://link.springer.com/chapter/10.1007/978-981-33-6862-0\\_54](https://link.springer.com/chapter/10.1007/978-981-33-6862-0_54)
3. **Feed-forward Neural Network Training by Hybrid Bat Algorithm.** Springer International Publishing 2020. Conference: MDIS 2020. [https://link.springer.com/chapter/10.1007/978-3-030-68527-0\\_4](https://link.springer.com/chapter/10.1007/978-3-030-68527-0_4)
4. **The COVID-19 Images Classification by MobileNetV3 and Enhanced Sine Cosine Metaheuristics.** Proceedings of ICMCSI 2022. Conference: ICMCSI Conference 2022. [https://link.springer.com/chapter/10.1007/978-981-19-2069-1\\_65](https://link.springer.com/chapter/10.1007/978-981-19-2069-1_65)
5. **ADOS “2<sup>nd</sup> Open Balkan Digestive Oncology Expert Meeting 2024” – (Keynote Speaker)** Innovation & Artificial Intelligence in Prevention and Treatment – discussed my findings at Cambridge and how my AI model finds cancer biomarkers <https://bauderevents.com/language/en/project/2nd-ados-open-balkan-digestive-oncology-expert-meeting/>
6. **Data Science Conference – DigiHealth Conference at DSC Europe – (Keynote Speaker)** AI and Digital Twins in Precision Oncology: From Single-cell Insights to Cancer Biology <https://datasciconference.com/>
7. **HPC Serbia: EuroCC4SEE – (Keynote Speaker)** Bridging borders: Advancing Translational Oncology Research Through AI <https://indico.ipb.ac.rs/event/590/contributions/411/>
8. **Serbian Medical Society Oncology, 62<sup>nd</sup> Oncology Congress – (Panellist)** <https://oncology.rs/>

## Skills

**AI/ML Frameworks:** PyTorch, TensorFlow, Scikit-Learn, XGBoost, SHAP, PyG, SciPy

**Data Engineering:** Python, Pandas, BigQuery, SQL, NoSQL, NumPy, PCR, t-SNE, UMAP, Selenium, OpenCV

**Infrastructure & Tools:** Docker, JavaScript, Kubernetes, Git, FastAPI, AWS, Azure, Matplotlib, Seaborn

**Biological Domain:** Protein sequences, Biomarkers, Molecule Characterization, Single-cell Genomics, Biological Network Construction, Spatial Transcriptomics, Epigenomics, Biotechnology, Bioinformatics, Neurobiology, Biology

**Interdisciplinary Skills:** Leadership, Team Player, Results-Driven Approach, Problem Solving, Decision Making, Adaptability, Flexibility

**Languages:** English (Fluent), Serbian (Fluent)