Pejman Shojaee

Personal Data

Address (TUD):	Andreas-Pfitzmann-Bau, Nöthnitzer Str. 46, 01069 Dresden, Germany
Address (HTWD):	Friedrich-List-Platz 1, 01069 Dresden, Germany
Mobile:	+49 1575 8151663
Email:	pejman.shojaee@tu-dresden.de, pejmanshojam31@gmail.com
Website:	https://pejmanshojam31.github.io/

Education

3/2021-12/2024	PhD in Mathematics (submitted) Center for Interdisciplinary Digital Sciences (CIDS) Department of Information Services and High-Performance Computing (ZIH) **Technische Universität Dresden**, Dresden, Germany Thesis: "modeling cell plasticity at the invasive edge to diminish glioblastoma early relapse risk (MI*EDGE)"
9/2015-3/2018	Master of Biomedical Engineering (Biomechanics) **Sahand University of Technology**, Tabriz, Iran Thesis: "Simulation and investigation of Drug delivery in Liver cancer and normal tissue by considering its Microvasculature" Thesis
9/2009-6/2015	Bachelor of Mechanical Engineering, **Shahrood University of Technology**, Shahrood, Iran Major: Heat and Fluid Mechanical Engineering Thesis: "Simulation of 2-Dimension viscous fingering in porous media"

Selected Publications

1- **Pejman Shojaee**, Tom Bischopink, Steffen Lange, Anja Voß Böhme. "Predicting Tumor Spheroid Status Through the Lens of Radiomics Analysis of Post-Treatment Dynamics", In preparation

2- **Pejman Shojaee**, Edwin Weinholz, Nadine S. Schaadt, Friedrich Feuerhake, Haralampos Hatzikirou. "Biopsy location and tumor-associated macrophages in predicting malignant glioma recurrence using an in-silico model", **npj systems biology and applications, 11(1), p.3**.https://www.nature.com/articles/s41540-024-00478-7

3- **Pejman Shojaee**, Federica Mornata, Andreas Deutsch, Massimo Locati, and Haralampos Hatzikirou. "The impact of tumor-associated macrophages on tumor biology under the lens of mathematical modelling: A review." **Frontiers in Immunology** 13 (2022): 1050067. https://doi.org/10.3389/fimmu.2022.1050067

4- Mostafa Sefidgar, Lida Alinezhad, Ehsan Bashooki, **Pejman Shojaee**, "Effect of different dynamic microvasculature in a solid tumor with the necrotic region during magnetic hyperthermia: An in-silico study"., **International Journal of Heat and Mass Transfer**, https://doi.org/10.1016/j.ijheatmasstransfer.2022.122662

5- Mostafa Sefidgar, Ehsan Bashooki, **Pejman Shojaee**, Numerical simulation of the effect of necrosis area in systemic delivery of magnetic nanoparticles in hyperthermia cancer treatment, **Journal of thermal biology**,https://doi.org/10.1016/j.jtherbio.2020.102742.

6- **Pejman Shojaee**, Hanieh Niroomand-Oscuii, Mostafa Sefidgar, Lida Alinezhad, Effect of nanoparticle size, magnetic intensity, and tumor distance on the distribution of the magnetic nanoparticles in a heterogeneous tumor microenvironment, 498 **Journal of magnetism and magnetic materials**, https://doi.org/10.1016/j.jmmm.2019.166089.

Research Experience

10/2024-present	*DataMedAssist Group, HTW Dresden-University of Applied* **Key Responsibilities:** - Develop an AI framework to predict the tumor spheroids' status through the lens of radiomics data - Investigate the ways to predict the days of release of tumor spheroids under treatment - Image processing and explore the solutions to tackle thenonlinearr behaviour of some of the spheroids
3/2021-12/2024	*PhD Candidate at the Center for Interdisciplinary Digital Sciences (CIDS) and Department of Information Services and High-Performance Computing (ZIH)* **Key Responsibilities:** - Develop and refine mathematical models for glioma-macrophage interactions. - Utilize virtual patient simulations to conduct in silico clinical trials. - Perform an uncertainty and sensitivity analysis for the proposed mathematical models. - Explore and develop the Bayesian combination of mathematical models and machine learning algorithms in optimising the predictions - Analysing and working with multimodal data,especiallyy the role of radiomics data in predicting the time to relapse
3/2018-3/2021	*Learning about Data Science and Self-employed Translator and Reviewer* **Key Responsibilities:** - Gained comprehensive knowledge in data science, including statistical analysis, machine learning, and data visualization techniques. - Published three articles on the subject of drug delivery and hyperthermia method in cancer treatment.
9/2016-3/2018	*Research Assistant at the Advanced Biofluids Laboratory, Sahand University of Technology* **Key Responsibilities:** - Assisted in designing and developing mathematical models for drug distribution in solid tumors.
6/2017-9/2017	*Research Collaborator at the Biological Engineering Laboratory, University of Tehran* **Key Responsibilities:** - Collaborated on a project focused on a patient-specific giant saccular cerebral aneurysm.

Computer Skills

Expert:	MATLAB, PYTHON(NumPy, Pandas, Scikit-learn, TensorFlow, SciPy, matplotlib.pyplot), COMSOL MULTIPHYSICS, MAPLE, UBUNTU
Familiar:	GIT, C++, SQL, ANSYS, R-BIOCONDUCTOR

Languages

PERSIAN:	Native
ENGLISH:	C1 (Fluent) IELTS: OVERALL SCORE 7
GERMAN:	Goethe-Zertifikat B2

Posters and Presentations

-**Contributed talk** The Role of Biopsy Position and Tumor-Associated Macrophages for Predictions on Recurrence of Malignant Gliomas: An In Silico Study" at The European Conference on Mathematical and Theoretical Biology (ECMTB) 2024, **University of Castilla La Mancha, Toledo Campus, 25th of July, 2024**
-**Contributed talk** "Predicting the time to relapse for individual patients with Glioblastoma for the second-line of intervention" at the Workshop on Computational Models in Biology and Medicine 2024, **Center for Regenerative Therapies (CRTD), Dresden**, 6th and 7th June 2024
-**Invited talk** "From Resection to Recurrence: Personalizing Glioma Prognosis with a Bayesian Mechanistic and Machine Learning Models" at Institute of medicalbinformation and Biometry, **Carl Gustav Carus Uniklinikum, Dresden**, 7th of March 2024
-**Contributed talk** at **e:Med Meeting 2023 on Systems Medicine** under the title "Predicting the time to relapse for individual patients with Glioblastoma for optimizing the second-line of treatment", **Berlin Oct 2023**.
-**Poster presentation** at the workshop modelling resistance evolution theoretical methodology symposium (**Max-Planck-Institut für Evolutionsbiologie**) under the title " Predicting the time to relapse for individual patients with glioblastoma (GBM) for optimizing the second line treatment", **Plön, April 2023**
-**Poster presentation** at **e:Med Meeting 2022 on Systems Medicine** under the title "Understanding the interplay of the remnant tumor cells and tumor-associated macrophages in Glioblastoma after the resection", **Heidelberg, Nov 2022**.
-**Poster presentation** at **The 12th European Conference on Mathematical and Theoretical Biology (ECMTB)** under the title "Calibration and extension of the model for glioma cell behavior at the invasive edge", **Heidelberg, Sep 2022**.
-Accepted in **Summer school** "Genomics and Transcriptomics, Integrated with Proteomics and Medical Informatics (Bioconductor)" at **Universitätsmedizin Mainz**, **May-June 2022**.

Reviewer

Journals: nature communications medicine, npj systems biology and applications, Scientific Reports, npj systems biology and applications, Computer Methods and Programs in Biomedicine, Computers in biology and medicine, Journal of Visualized Experiments, Australasian physical and engineering sciences in medicine,
Biomedical Physics and Engineering Express.

Interests and Activities

Image analysis, Radiomics, Artificial intelligence, Machine learning, Deep learning, Virtual Reality, Digital twin, Biophysics, Biomedical applications, Uncertainty quantification, *in silico* clinical trials, precision medicine

Memberships

-European Society of Mathematical Biology (ESMTB)
-Society of Mathematical Biology (SMB)

Honors and Awards

-Supervisor at Seminar in Mathematical biology SoSe2023 "Mathematics of innovative cancer therapies", Dresden, May, June 2023
- PhD scholarship from Eracosysmed, BMBF, Germany
-Honoured multidisciplinary master thesis
-Top 4% among more than 350,000 participants in the national entrance university
-Best paper award- 3rd Iranian Conference on Heat and Mass Transfer-ICHMT-2017
-Entailed to a full scholarship award during Undergraduate Studies

REFERENCES

Will be provided upon request