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Google Scholar: <https://scholar.google.com/citations?user=vgiV4CoAAAAJ&hl=en&oi=ao>

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BIOGRAPHY

Dr. Natacha Usanase is a young Rwandan researcher currently residing in the Turkish Republic of Northern Cyprus. Articulate professional offering an in-depth background in genetics, industrial and medical biotechnology, microbiology, and biomedical engineering, focusing on disease diagnosis, treatment, and decision-making. Professional scientific paper writing personnel incorporating operational research approaches and artificial intelligence models.

Natacha Usanase received a Bachelor's Degree in 2020 at the College of Science and Technology-University of Rwanda, in the Faculty of Biotechnology, Department of Biology, where she successfully conducted a notable research project on the Identification of Plastic Degrading Microorganisms and Plastic Quantification. Dr. Natacha also received a Master's Degree in 2022 at Near East University, in the Department of Biomedical Engineering, where she conducted a groundbreaking research project on "The Role of Artificial Intelligence in the Prediction of Lung Cancer". With a strong interest in healthcare applications, she is invested in hybrid applications of Artificial Intelligence algorithms in the medical field for disease diagnosis, treatment, and decision-making. Currently holding a PhD in Biomedical Engineering at Near East University. Recently, she has been working as a postdoctoral researcher in the Irfan Suat Gunsul Operational Research Institute at Near East University, Turkish Republic of North Cyprus. She has over 20 publications in international and national journals, books, and conferences.

**ACADEMIC
CURRICULUM VITAE**

1. Name - Surname: Natacha Usanase

2. Title: Dr.

3. Educational Background:

Degree	Department/Program	University	Year
Bachelor's	Biology/ Faculty of Biotechnology	College of Science and Technology-University of Rwanda, Rwanda	2017-2021
Master's	Applied Sciences/ Biomedical Engineering	Near East University, Cyprus	2021-2022
PhD	Applied Sciences/Biomedical Engineering	Near East University, Cyprus.	2023-2025

4. Master's / PhD Thesis

4.1.Master's Thesis Title and Thesis Advisor(s): "The Role of Artificial Intelligence in The Prediction Of Lung Cancer": Advisor: Assoc.Prof.Dr. Dilber Uzun Ozsahin

4.2.PhD Thesis /Medical Specialty Thesis Title and Advisor(s): "Evaluating The Performance of An Integrated Multi-Modal AI Framework for Early Detection and Therapeutic Decision-Making of Pancreatic Cancer": Advisor: Assist. Prof.Dr.Ilker Ozsahin, Co-Advisor: Assoc.Prof.Dr. Dilber Uzun Ozsahin

5. Academic Titles:

Date of Assistant Professorship:

Date of Associate Proferssorship:

Date of Professorship:

6. Supervised Master's and PhD Theses:

6.1. Master's Theses

6.2. PhD Theses

7. Publications

7.1. Articles Published in International Peer-Reviewed Journals (SCI,SSCI, AHCI, ESCI, Scopus)

1. Usanase, N., Uwamahoro, C. & Ozsahin, D.U. (2026). Artificial Intelligence in Improving Stroke Diagnosis: Focus on Machine Learning Models and Explainable AI Application. EABR. Experimental and Applied Biomedical Research, 26(4), 391-397. <https://doi.org/10.2478/eabr-2025-0023>
2. Usanase, N., Usman, A. G., & Ozsahin, D. U. (2026). Applications of Machine Learning Algorithms in Dementia Classification Using Eight Clinical Diagnostic Measures. Ageing International, 51(1), 1.
3. Ozsahin, D. U., Usanase, N., & Ozsahin, I. (2025). Advancing pancreatic cancer management: the role of artificial intelligence in diagnosis and therapy. Beni-Suef University Journal of Basic and Applied Sciences, 14(1), 1-18.
4. Almisned, F. A., Usanase, N., Ozsahin, D. U., & Ozsahin, I. (2025). Incorporation of explainable artificial intelligence in ensemble machine learning-driven pancreatic cancer diagnosis. Scientific Reports, 15(1), 14038.
5. Usanase, N., Emegano, D. I., Uzun, B., Ozsahin, D. U., & Ozsahin, I. (2025). An Ensemble Fuzzy-MCDM Approach for Evaluation of Approved Monkeypox Vaccines. The EuroBiotech Journal 9 (2), 154 - 164
6. Umar, H., Aliyu, M. R., Usanase, N., Duwa, B. B., & Ozsahin, D. U. (2025). Synthesis of Chitosan Functionalized Zinc Oxide Nanocomposite using Moringa Stenopetala Extract and Assessment of its Antibacterial and Cytotoxic Potentials. Cyprus Journal of Medical Sciences.
7. Usanase, N., Uzun, B., Ozsahin, D. U., & Ozsahin, I. (2024). A look at radiation detectors and their applications in medical imaging. Japanese Journal of Radiology, 42(2), 145-157.
8. Usman, A. G., Natacha U., Abba S. I., Ilker O., Berna U., Mohamed A. Y., Syed M. R., & Dilber U. O. (2023). "Environmental modelling of CO concentration using AI-based approach supported with filters feature extraction: a direct and inverse chemometrics-based simulation." *Sustainable Chemistry for the Environment*, 100011.

9. Balcioglu O., Natacha U., Berna U., Ilker O., & Dilber U.O.. "A comparative analysis of DOACs vs warfarin for venous thromboembolism treatment in renal insufficiency." *Turkish Journal of Vascular Surgery (TJVS)* 32, no. 1 (2023).

7.2. Articles Published in Other International Peer-Reviewed Journals

1. Duwa, B. B., Usanase, N., & Uzun, B. (2025). Enhanced Drug Classification for Cancers of the Liver with Multi-Criteria Decision-Making Method-PROMETHEE. *Global Journal of Sciences*, 2(1), 24-36.
2. Basil B. Duwa, Natacha Usanase, Fatimah Adamu Wakil, Yoshebel F. Zirra, Celestine Iwendi, Dilber Uzun Ozsahin. AI-DRIVEN INNOVATION IN EDUCATION AND RESEARCH: A ROADMAP FOR GLOBAL SOUTH DEVELOPMENT. *Journal of International Scientific Publications: Educational Alternatives* 23, 198-205 (2025).
<https://doi.org/10.62991/EA1996706206>
3. Usanase, N., Uzun, B., & Ozsahin, D. U. (2025). Incorporating A Hybrid Fuzzy Logic Model in Diet Style Selection. *Global Journal of Sciences*, 2(2), 37-50. <https://doi.org/10.48165/gjs.2025.2204>

7.3. Papers Presented at International Scientific Conferences and Published in Conference Proceedings

1. Usanase, N., Ozsahin, D. U., Hussain, A. J., Ozsahin, I., & Uzun, B. (2025, November). The Preference Decision Analysis on Biomedical and Food Cell Preservation Techniques. In 2025 18th International Conference on Development in eSystem Engineering (DeSE) (pp. 511-516). IEEE.
2. Usanase, N., Ozsahin, I., Ozsahin, D. U., Hussain, A. J., & Uzun, B. (2025, November). The Effect of Patient, Donor, and Organ Viability Features in Kidney Transplant Survival Prediction. In 2025 18th International Conference on Development in eSystem Engineering (DeSE) (pp. 130-135). IEEE.
3. Usanase, N., Uzun, B., David, L. R., Ozsahin, D. U., & Ozsahin, I. (2024). A Decision-Making Approach in The Clinical Diagnosis and Treatment of Vulva Cancer. In 2024 17th International Conference on Development in eSystem Engineering (DeSE) (pp. 370-374). IEEE.
4. Usanase, N., Uzun, B., David, L. R., Ozsahin, D. U., & Ozsahin, I. (2024). Application of Fuzzy PROMETHEE in the Analysis of Childbirth Techniques. In 2024 17th International Conference on Development in eSystem Engineering (DeSE) (pp. 364-369). IEEE.
5. Usanase, N., Usman, A. G., Ozsahin, D. U., David, L. R., Ozsahin, I., Uzun, B., & Hussain, A. J. (2024). Hybridized Paradigms for The Clinical Prediction of Lung Cancer. In

- 2024 17th International Conference on Development in eSystem Engineering (DeSE) (pp. 417-422). IEEE.
6. Usanase, N., Ozsahin, D. U., David, L. R., Uzun, B., Hussain, A. J., & Ozsahin, I. (2024). Deep learning-based CT-scan image classification for accurate detection of pancreatic cancer: A Comparative Study of Different Pre-Trained Models. In 2024 17th International Conference on Development in eSystem Engineering (DeSE) (pp. 358-363). IEEE.
 7. Uzun, B., Usanase, N., Ozsahin, D. U., & Ozsahin, I. (2024). The Application of the Multi-Criteria Decision-Making Model in the Risk Assessment of Cervical Cancer Complications. In 2024 Advances in Science and Engineering Technology International Conferences (ASET) (pp. 1-5). IEEE.
 8. Usanase, N., Uzun, B., Ozsahin, I., & Ozsahin, D. U. (2023). Optimizing Melanoma Therapy Decision-Making with a Multi-criteria Analytical Approach. In International Conference on Theory and Applications of Fuzzy Systems and Soft Computing (pp. 63-72). Cham: Springer Nature Switzerland.
 9. Usanase, N., Uzun, B., Ozsahin, I., & Ozsahin, D. U. (2022, October). The preference ranking of gold nanoparticle synthesis methods using a multi-criteria decision-making model. In IET Conference Proceedings CP816 (Vol. 2022, No. 14, pp. 314-320). Stevenage, UK: The Institution of Engineering and Technology.
 10. Ozsahin, Dilber Uzun, Natacha Usanase, Berna Uzun, Ilker Ozsahin, and Ozlem Balcioglu. "The Efficacy and Safety of Direct Oral Anticoagulants for The Treatment of Venous Thrombosis in Cancer Using Fuzzy PROMETHEE." In *2023 Advances in Science and Engineering Technology International Conferences (ASET)*, pp. 1-5. IEEE, 2023.

7.4. National/international Books or Book Chapters

1. Ozsahin, I., Usanase, N., Uzun, B., Ozsahin, D. U., & Mustapha, M. T. (2024). A mathematical resolution in selecting suitable magnetic field-based breast cancer imaging modality: a comparative study on seven diagnostic techniques. In *Artificial Intelligence and Image Processing in Medical Imaging* (pp. 173-194). Academic Press.
2. Ozsahin, I., Uzun, B., Mustapha, M. T., Usanase, N., Yuvali, M., & Ozsahin, D. U. (2024). BI-RADS-based classification of breast cancer mammogram dataset using six stand-alone machine learning algorithms. In *Artificial intelligence and image processing in medical imaging* (pp. 195-216). Academic Press.
3. Ozsahin, D. U., Duwa, B. B., Emegano, D. I., Mustapha, M. T., Usanase, N., Onakpojeruo, E. P., & Ozsahin, I. (2024). Construction of an automated hand sanitizer dispenser used against transmissible diseases. In *Practical Design and Applications of Medical Devices* (pp. 179-190). Academic Press.

7.5. Articles Published in National Peer-Reviewed Journals

8. Art and Design Activities

9. Projects

10. Administrative Responsibilities

11. Memberships in Scientific and Professional Organizations

12. Awards

1. Young Researcher Award: [2023] Near East University
2. Young Researcher Award: [2024] Near East University

13. Undergraduate and Graduate Courses Taught in the Last Two Years

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