

Servas Adolph Tarimo

PhD Researcher | Future Convergence Technology / Big Data Engineering
Advanced Data Mining Lab (ADM Lab), Soonchunhyang University, South Korea

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PERSONAL INFORMATION

Nationality	Tanzanian
Languages	Swahili (Native), English (Professional working proficiency)
Research base	Soonchunhyang University, Asan, South Korea

PROFESSIONAL SUMMARY

Servas Adolph Tarimo is a PhD researcher in Future Convergence Technology / Big Data Engineering at Soonchunhyang University, South Korea. His work focuses on AI for healthcare, especially medical image analysis, domain adaptation, multimodal clinical report generation, and practical LLM/RAG systems. He develops AI models that remain reliable across hospitals, imaging devices, clinical environments, and patient populations where data distributions differ. He also connects research with innovation and entrepreneurship through international programs such as the FLOuRISH Academic Entrepreneurship Global Program 2026 in Japan. His long-term goal is to build practical, trustworthy AI health systems for real-world settings, including Tanzania and other low-resource contexts.

SKILLS

Programming	Python, Java, C++, JavaScript, React PWA, FastAPI
Machine Learning & AI	PyTorch, TensorFlow, Keras, Scikit-Learn, YOLO, Vision Transformers, GANs
LLM / AI Systems	Retrieval-Augmented Generation (RAG), LangChain/LangGraph-style workflows, NLP, clinical decision-support systems
Data Analysis	Healthcare data analytics, statistical modeling, multimodal data analysis, hybrid search, EHR data analysis
Tools	Jupyter Notebook, VS Code, Git, GitHub, OpenCV, Supabase/PostgreSQL
Healthcare AI	White blood cell classification, medical image segmentation, domain adaptation, clinical report generation

EDUCATION

- | | | |
|---|---|-------------------------|
| 2023.09 - Present | Soonchunhyang University
Ph.D. Student, Future Convergence Technology / Big Data Engineering
Advisor: Prof. Woo Ji-Young
Lab: Advanced Data Mining Lab (ADM Lab) | Asan, South Korea |
| 2021.09 - 2023.08 | Soonchunhyang University
M.Sc. in Big Data Engineering
Advisor: Prof. Woo Ji-Young
Lab: Advanced Data Mining Lab (ADM Lab) | Asan, South Korea |
| * Dissertation: WBC YOLO-ViT: 2-Way 2-Stage White Blood Cell Detection and Classification with a Combination of YOLOv5 and Vision Transformer. Paper View thesis. | | |
| 2017.01 - 2020.08 | The United African University of Tanzania (UAUT)
B.Sc. in Computer Engineering and Information Technology | Dar es Salaam, Tanzania |

RESEARCH EXPERIENCE

2023 - Present

Soonchunhyang University
Department of Future Convergence Technology / Big Data Engineering
Advisor: Prof. Woo Ji-Young

Asan, South Korea

- Domain Adaptation in Medical AI - developing transfer learning and domain adaptation methods for generalizing medical imaging and healthcare models across clinical sites, imaging protocols, and patient populations.
- Multimodal Report Generation for Blood Smear Analysis - building AI systems that read microscopy images from blood smear tests and generate structured clinical reports by combining image data, attention mechanisms, and language models.
- Medical Report Generation & RAG for Clinical Decision Support - building LLM-based systems that produce structured clinical reports and physician-style patient summaries grounded in verified medical literature via Retrieval-Augmented Generation.

2021 - 2024

Soonchunhyang University
Department of Future Convergence Technology / Big Data Engineering
Advisor: Prof. Woo Ji-Young

Asan, South Korea

- Blood Cell Classification & Domain Adaptation - developed methods for classifying white blood cells and other blood cells across hospitals with different equipment, staining conditions, and image distributions.
- Weight Module for cross-hospital adaptation - designed model-weighting strategies to reduce misleading feature learning when source and target hospital domains do not fully match.
- Reinforcement learning-based style transfer - investigated approaches for bridging visual differences between hospitals and improving robustness in blood-cell image analysis.
- Generative Adversarial Networks for Medical Data - developed GAN-based methods for generating realistic blood-cell images to augment limited medical datasets and support model training.

RESEARCH INTEREST

- **Domain Adaptation in Medical AI:** developing AI models that keep working when transferred across hospitals, imaging devices, clinical protocols, and patient populations.
- **Blood Cell Image Analysis:** automated detection, counting, classification, and report generation for blood-smear microscopy and hematological diagnostics.
- **Multimodal Clinical AI:** combining medical images, clinical notes, and structured patient data to support richer clinical understanding.
- **LLM and RAG Systems:** retrieval-grounded AI applications for clinical decision support and practical user-facing guidance systems.
- **AI for Low-Resource Settings:** building practical AI tools for healthcare and education contexts where access to specialists or expert guidance is limited.

WORK EXPERIENCE

2021.09 - Present

Research Assistant

Asan, South Korea

Advanced Data Mining Lab (ADM Lab), Soonchunhyang University

- Developing medical AI systems for blood-cell image analysis, domain adaptation across clinical sites, multimodal report generation, and RAG-based clinical decision-support workflows with Prof. Woo Ji-Young.

PARTICIPATING PROJECTS

2026 - Present	Domain Adaptation in Medical AI - robust healthcare models across hospitals, imaging devices, and patient populations.
2026 - Present	Multimodal Report Generation for Blood Smear Analysis - microscopy-to-report generation for clinical workflows.
2026, Completed	Matokeo Yangu - bilingual platform for Tanzanian students to check exam results and receive AI-guided university and career advice.
2021.09 - 2024, Completed	WBC Detection & Classification - automated white blood cell detection, counting, and classification with YOLO and Vision Transformers.
2021 - 2024, Completed	Generative models for blood-cell image augmentation and class-imbalance mitigation.

INTERNATIONAL JOURNAL ARTICLES [*: CO-FIRST OR CORRESPONDING AUTHOR]

1. Yunjung Hong, Servas Adolph Tarimo, and Jiyoung Woo, "Pancreas Segmentation Using a Two-Stage Pipeline of Faster R-CNN and TransUNet," *Applied Sciences*, vol. 16, no. 12, article 5764, 2026. doi:10.3390/app16125764.
2. S.A. Tarimo, Mi-Ae Jang, Emmanuel Edward Ngasa, Hee Bong Shin, HyoJin Shin, and Jiyoung Woo, "WBC YOLO-ViT: 2-Way 2-Stage White Blood Cell Detection and Classification with a Combination of YOLOv5 and Vision Transformer," *Computers in Biology and Medicine*, vol. 169, article 107875, 2024. doi:10.1016/j.combiomed.2023.107875.
3. Emmanuel Edward Ngasa, Mi-Ae Jang, S.A. Tarimo, Jiyoung Woo, and Hee Bong Shin, "Diffusion-based Wasserstein Generative Adversarial Network for Blood Cell Image Augmentation," *Engineering Applications of Artificial Intelligence*, vol. 133, article 108221, 2024. doi:10.1016/j.engappai.2024.108221.

INTERNATIONAL CONFERENCE

1. S.A. Tarimo, "Adapting YOLO-ViT for Differential Diagnosis of Myelodysplastic Syndromes and Normal Blood Cell," *Proceedings of the Korea Society of Computer and Information Conference*, 2024.
2. S.A. Tarimo and J. Woo, "White Blood Cell Detection and Classification using YOLOv5 with Hybrid ResNet50-VGG16-SVM," in *Proceedings of the 6th International Conference on ICT for Smart Health & Home (ICT4sHealth & Home)*, Kota Kinabalu, Malaysia, December 18-22, 2022. Presentation: December 19, 2022.

PATENTS

1. None. Open to future innovations and patent opportunities related to AI, healthcare, clinical decision support, and medical image analysis.

AWARDS AND HONORS

- 2010 Excellence Award - Certificate of Computer Maintenance and Repair, Microsoft Office 2003 and 2007.
- 2010 Excellence Award - Certificate of Network Setup, Internet Repair, Email Usage, and Web Design.
- 2012 Excellence Award - Certificate of IT Essentials: PC Hardware and Software, Cisco Networking Academy.
- 2014 Excellence Award - Certificate of IT Essentials: PC Hardware and Software, Cisco Networking Academy.
- 2019 Excellence Award - Certificate Software Developer Program and Adobe Photoshop Design.
- 2019 Excellence Award - Certificate of Korea Culture Exchange Program (PASS Program).
- 2026 Certificate of Completion - FLOuRISH Academic Entrepreneurship Global Program 2026 in Japan, Tokyo University of Agriculture and Technology, September 6-11, 2026.
- 2026 Interdisciplinary Innovation Award - FLOuRISH Academic Entrepreneurship Global Program 2026 in Japan.

REFEREE

Prof. Woo Ji-Young, Ph.D.
Department of AI and Big Data Engineering, Soonchunhyang University
Asan, South Korea
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