Alemu Sisay Nigru

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Professional summary

Accomplished researcher with 3 years of experience specializing in machine learning, deep learning, and medical imaging, with a strong track record of advancing AI-driven healthcare solutions. Demonstrated expertise in Python, TensorFlow, PyTorch, and medical image annotation, supported by international research collaborations at New York University and the Center for Digital Health & Implementation Science. Proven ability to deliver impactful results in data analysis and neuroimaging, aiming to leverage advanced technical and analytical skills to drive innovation in medical AI applications.

Education

UNIVERSITÀ DEGLI STUDI DI BRESCIA   Brescia, Italy
Doctor of Philosophy (Ph.D.)   2022 - Present

Pursuing a Ph.D. focusing on Artificial Intelligence in Medicine and Innovation in Clinical Research and Methodology. This program provided advanced training in applying AI to medical contexts and clinical research.

MID SWEDEN UNIVERSITY   Sundsvall, Sweden
Erasmus Exchange   2021 - 2021

Participated in a 5-month Erasmus+ mobility study program. Focused on Sensor Network programming, Physical Modeling of Embedded systems, and Business English.

UNIVERSITY OF GONDAR   Gondar, Ethiopia
B.Sc. in Electrical and Computer Engineering   2012 - 2016

Earned a Bachelor's degree in Electrical and Computer Engineering with a specialization in Communication Engineering. The thesis focused on a development of Fingerprint based Attendance System (FAS).
Grade: 3.89/4.0, Gold Medalist

UNIVERSITÀ DEGLI STUDI DI BRESCIA   Brescia, Italy
M. Sc. in Communication Technologies and Multimedia   2019 - 2022

Completed a Master of Science in Telecommunications Engineering, specializing in Communication Technologies and Multimedia. The curriculum covered advanced topics in computer programming, machine learning, deep learning, and medical image analysis.
Thesis Title: Deep learning based neuro-image retrieval
Grade: 110/ 110 cum Laude

UNIVERSITÀ DEGLI STUDI DI BRESCIA   Brescia, Italy
Ph.D. School   2023 - 2023

Attended a 6-day PhD School focused on Statistical Methods & Data Analysis in Medical Research. The course provided fundamentals for analyzing clinical data using parametric or non-parametric methodologies.

AI FOR GLOBAL GOALS & UNIVERSITY OF OXFORD   Oxford, UK
Summer School   2023 - 2023

Completed a 3-months Oxford Machine Learning Summer School, covering MLx Fundamentals, MLx Cases, MLx FINANCE & NLP, and MLx HEALTH. Gained training in linear algebra, optimization, statistical/probabilistic ML, deep learning, and real-world ML implementation.

IEEE COMMUNICATION SOCIETY Genoa, Italy
Ph.D. School 2023 - 2023
Participated in the IEEE ComSoc eHealth TC Ph.D. School, designed to empower Ph.D. students with a structured academic curriculum. Engaged with keynotes and lecture series to broaden skill sets and enhance interpersonal abilities, with an emphasis on international networking.

WORLDQUANT UNIVERSITY Remote
Applied Data Science 2022 - 2022
Completed an Applied Data Science Lab short course, demonstrating completion of eight end-to-end, applied data science projects. Demonstrated ability to access, explore, and clean data from various sources, create ETL pipelines, build machine learning models, and create visualizations.

UNIVERSITY OF GONDAR Gondar, Ethiopia
Advanced diploma 2017 - 2018
Obtained a Higher Diploma Program Certificate in Teaching Methods. The training focused on classroom management and creating interactive learning activities.

Experience

NEW YORK UNIVERSITY United States
Visiting Ph.D. Student Mar 2025 - Oct 2025

- Engineered machine learning algorithms for LBP severity grading, enhancing diagnostic accuracy across diverse MRI datasets
- Optimized model performance through transfer learning and domain adaptation, improving generalization to external datasets by 18%
- Validated algorithms on multi-institutional MRI data, ensuring robust clinical applicability and reproducibility

CENTER FOR DIGITAL HEALTH & IMPLEMENTATION SCIENCE (CDHI) Ethiopia
Visiting Ph.D. student Aug 2024 - Dec 2024

- Engineered deep learning models for spinal disc severity grading, boosting diagnostic throughput by 30% and improving accuracy by 18% compared to baseline methods.
- Developed an intuitive graphical user interface, enabling seamless integration of AI tools into clinical workflows and increasing clinician adoption rates by 40%.
- Collaborated with a multidisciplinary team to deploy models in a pilot hospital study, reducing radiologist review time by 25% and enhancing patient triage efficiency.

POLIAMBULATORIO OBERDAN Brescia, Italy
Extraordinary Internship Apr 2022 - Nov 2022

- Streamlined diagnostic workflows by analyzing 500+ digital medical images with advanced software, improving ML ground truth accuracy and accelerating radiology team collaboration by 30%.

- Identified actionable trends through in-depth therapeutic data analysis for 100+ patients, directly influencing evidence-based treatment plans and optimizing patient outcomes.
- Authored and presented a comprehensive literature review on cutting-edge AI applications in healthcare, guiding senior clinicians' adoption strategies and shaping future technology initiatives.

UNIVERSITY OF GONDAR Ethiopia
Assistant Lecturer Aug 2016 - Aug 2019
- Delivered lectures on computer programming, signal processing, and digital logic design to 200+ undergraduate students.
- Developed practical lab exercises in C++, Python, and MATLAB, enhancing student engagement and technical proficiency.
- Mentored student projects, fostering analytical and problem-solving skills in engineering cohorts.

Skills

Technical: Machine Learning, Deep Learning, Data Analysis, Python, Java, C++, TensorFlow, PyTorch, OpenGL, Matlab, Neuro, Artificial Intelligence, Medical Imaging, Medical Image Annotation, Medical Information Collection