

FROMSA TESHOME NEGASA

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OBJECTIVE

Seeking a PhD position with research interests in speech processing, face biometrics, inverse imaging, hyperspectral imaging, computational optics, and medical image analysis. Passionate about leveraging AI and machine learning to bridge auditory and visual signal processing, optimize optical systems, and advance computer vision technologies for real-world applications.

EDUCATION

- **UNIVERSITÉ JEAN MONNET** September 2023 – Ongoing
Erasmus Mundus Joint Masters Degree in Photonics for Security Reliability Sustainability and Safety (PSRS) [🔗](#) Saint-Étienne, France
 - **Grade:** 16.13 / 20 (Université Jean Monnet), 4.8 / 5 (University of Eastern Finland)
 - **Relevant Courses:** Fourier Optics, Digital Image Processing, Optical Engineering with Zemax, Basics of Signal Processing, Machine Vision, Machine Learning, Speech Processing
- **TIANJIN UNIVERSITY** June 2022
Bachelor of Engineering in Chemical Engineering and Technology Tianjin, China
 - Completed a Propaedeutic Education program in Chinese Language prior to commencing major coursework
 - **Grade:** 3.01 / 4 over 175 credits
 - **Relevant Courses:** Scientific Computing in MATLAB, Numerical Methods
- **UNIVERSITY OF THE PEOPLE** June 2022
Associate of Science in Computer Science Online
 - **GPA:** 3.59 / 4.00
 - **Relevant Courses:** Statistical Inference, Programming in Python


EXPERIENCE

- **SONY Europe R&D, Stuttgart Laboratory 1 (SL1)** [🔗](#) March 2025 – August 2025
Master Thesis Researcher Stuttgart, Germany
 - Developing DL models for hyperspectral image reconstruction from Computer Tomography Imaging Spectrometer
 - Optimizing and minimizing neural network architectures for efficient mobile deployment
 - Implementing a pipeline in Android, integrating image acquisition, reconstruction, and biometric analysis
- **LISSI Laboratory and IMRB (Mondor Institute of Biomedical Research)** October 2024 - January 2025
M2 Research Internship Créteil, France
 - Developing ML/DL methods to analyze cell migration patterns in Duchenne Muscular Dystrophy research
 - Implementing automated tracking systems to study myoblast migration through optical microscopy data
 - Collaborating with interdisciplinary teams to evaluate disease progression using cell migration analysis
- **Tianjin University** September 2022 – August 2023
Graduate Student Assistant, School of Chemical Engineering Tianjin, China
 - Developed ML models for industrial applications and image processing at SMART Bio-informatics Lab

PROJECTS

- **Multi-Functional Biometric System** October 2024 - January 2025
Tools: Python, OpenCV, TensorFlow, PyQt, [🔗](#)
 - A unified system for face recognition (verification, identification, expression, age, gender, and pose estimation).
 - Included human body pose estimation and an integrated GUI for seamless user interaction.
- **Speech Classification** January 2025
Tools: Python, Scipy, Matplotlib, sounddevice [🔗](#)
 - A multi-classifiers ML system that classifies audio signals into two classes ("forward" and "backward").
 - Utilized spectrogram analysis, Principal Component Analysis (PCA), and model training and evaluation workflow.
- **Text-Based LLM Chat Interface and Multi-Modal LLM App with Text and Image Inputs** October 2024
Tools: Python, Colab, ngrok, FastAPI [🔗](#)[🔗](#)
 - Developed a GUI for LLMs with text and image inputs through Colab-hosted APIs.
- **Hyperspectral Imaging: Spectral Image Analysis** April 2024
Tools: Nuance Ex-VIS Camera, MATLAB [🔗](#)
 - Captured and analyzed spectral images with a Nuance Ex-VIS camera under simulated daylight.
- **Undergraduate Thesis Project: Amharic Character Recognition with U-Net** January 2022 - June 2022
Tools: Sequential CNN, Factored CNN, U-Net, Python [🔗](#)



- Pre-processed datasets from literature sources and implemented on different architectures.
- Achieved 93% accuracy on Amharic character recognition.

- **Research Project: China-ASEAN Online Program on Data Science and Big Data** September 2020 - December 2020
Tools: Python, Keras 
 - Led a four-person research team on Named Entity Recognition (NER) in Natural Language Processing.
 - Designed and implemented NLP models for entity extraction and classification.
- **IChemE Process Design Project: Process Simulation and Optimization** November 2021 - June 2022
Tools: Aspen Plus, AutoCAD
 - Optimized vertical flash drum equipment sizing and developed a comprehensive process flow by integrating P&IDs.







SKILLS

- **Programming Languages:** Python, MATLAB, Kotlin
- **Deep Learning and Computer Vision Frameworks:** TensorFlow, OpenCV
- **Web & Database Technologies:** HTML, CSS, SQL
- **Other Tools & Technologies:** Microsoft Office, L^AT_EX(Overleaf), Git
- **Research Skills:** Literature Review, Data Analysis, Good Laboratory Practice, Problem Solving
- **Languages:** English (IELTS: 7.0/Duolingo: 135), Mandarin Chinese (HSK 5), Amharic (Native)

HONORS AND AWARDS

- **Erasmus Mundus Joint Master's Degree Scholarship** September 2023
Education, Audiovisual and Culture Executive Agency, European Commission 
 - Associated with Erasmus Mundus Joint Master Degree Photonics for Security Reliability and Safety (PSRS)
- **Distinguished International Student Award** July 2018
Tianjin University
 - Awarded the Full Attendance Scholarship and the Second Prize Scholarship of Propaedeutic Education of Chinese Language.
- **Chinese Government Scholarship** September 2017
Chinese Scholarship Council 
 - Associated with Tianjin University, School of Chemical Engineering

CERTIFICATIONS

- MATLAB Fundamentals, *MathWorks*,  Mar 2023
- Android Developer Fundamentals, *Udacity*,  Oct 2024
- OpenCV Bootcamp, *OpenCV University*,  Feb 2024
- Google Data Analytics Professional Certificate, *Google via Coursera*,  Jun 2023
- Chinese Proficiency Test, HSK (Level 5), *Center for Language Education and Cooperation*,  May 2022
- Machine Learning, *Stanford University via Coursera*,  Apr 2021

REFERENCES

1. **Nathalie Destouches** 
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