FROMSA TESHOME NEGASA

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EDUCATION

- **TAMPERE UNIVERSITY** *January 2026 – Present*
  Doctoral Researcher in Signal Processing and Machine Learning Tampere, Finland
  ◦ Doctoral School of Industry Innovations (DSII); industry collaboration with Microsoft Surface Imaging
  ◦ Computational imaging, optics–algorithm co-design, and machine learning–based inverse imaging

- **UNIVERSITÉ JEAN MONNET (UJM)** *September 2023 – September 2025*
  Erasmus Mundus Joint Masters Degree in Photonics for Security, Reliability, and Safety (PSRS) Saint-Étienne, France
  ◦ **Grade:** 16.13/20 at UJM, 4.8/5 at University of Eastern Finland, 16.31/20 at Université Paris-Est Créteil
  ◦ Graduated with Honors (Grade: A), Ranked **1/20** in Cohort
  ◦ **Thesis:** *"Multi-Aperture Computed Tomography Imaging Spectrometer (MACTIS) for Biometric Authentication"*

- **TIANJIN UNIVERSITY** *June 2022*
  Bachelor of Engineering in Chemical Engineering and Technology Tianjin, China
  ◦ **Grade:** 3.01 / 4 over 175 credits
  ◦ **Undergraduate Thesis:** Deep Learning-based Amharic Character Recognition (93% accuracy)

- **UNIVERSITY OF THE PEOPLE** *June 2025*
  Associate of Science in Computer Science Online
  ◦ **GPA:** 3.58 / 4.00
  ◦ **Relevant Courses:** Statistical Inference in R, OOP in Python, Databases I & II (SQL)

EXPERIENCE

- **SONY Europe Limited - Stuttgart Technology Center (STC)** *March 2025 – September 2025*
  Master Thesis Researcher Stuttgart, Germany
  ◦ Developed deep learning models for hyperspectral biometric verification using Multi-aperture CTIS.
  ◦ Designed one-class classification pipelines (Deep SVDD and HypOC) for real vs. fake skin detection.
  ◦ Achieved >98% AUROC on synthetic datasets; optimized model for mobile deployment.

- **LISSI Laboratory and IMRB (Mondor Institute of Biomedical Research)** *October 2024 - January 2025*
  M2 Research Internship Créteil, France
  ◦ Developed ML/DL methods to analyze cell migration patterns in Duchenne Muscular Dystrophy research.
  ◦ Implemented automated tracking systems to study myoblast migration through optical microscopy data.
  ◦ Collaborated 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, [GitHub]
  ◦ A unified system for face recognition (verification, identification, expression, age, gender, and pose).
  ◦ Included human body pose estimation and an integrated GUI for seamless user interaction.

- **Text-Based LLM Chat Interface and Multi-Modal LLM App with Text and Image Inputs** *October 2024*
  Tools: Python, Colab, ngrok, FastAPI [GitHub][GitHub]
  ◦ Developed a GUI for LLMs with text and image inputs through Colab-hosted APIs.

- **Amharic Character Recognition with U-Net** *January 2022 - June 2022*
  Tools: Sequential CNN, Factored CNN, U-Net, Python [GitHub]
  ◦ Pre-processed datasets from literature sources and implemented on different architectures.
  ◦ Achieved 93% accuracy on Amharic character recognition.

Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[S.1] Fournier, R., et al. (2025). **A Comprehensive Review of Traditional Automated Cell Tracking Techniques in Cell Migration**. Manuscript submitted for publication in *Computers in Biology and Medicine*.

Skills

- **Programming Languages:** Python, MATLAB, Kotlin
- **ML/DL Libraries:** Pytorch, TensorFlow, OpenCV
- **Other Tools & Technologies:** Microsoft Office, LaTeX(Overleaf), Git, UNIX, HTML/CSS, SQL, Zemax
- **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's Degree Photonics for Security Reliability and Safety (PSRS)
- **Distinguished International Student Award** *July 2018*
  Tianjin Univeristy
  - 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 2025*
- 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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   *Relationship: EMJMD PSRS Head Coordinator and **Fourier Optics** Instructor ar UJM*
2. **Polina Kuzhir**
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   *Relationship: **Advanced Biomedical Optics** course Instructor at UEF*
3. **Amine Nait-Ali**
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   *Relationship: Local PSRS Coordinator and **Biometrics II** course Instructor at UPEC*
4. **Mazen Mel**
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   Email: mazen.mel@sony.com
   Relationship: Master's thesis supervisor at Sony