

# BETHEL MELESSE TESSEMA

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Machine Learning Engineer | Visa: Korea F2 visa (**no sponsorship required**) | DOB: 1996-09-11 (Female)

## EDUCATION

<b>Masters of Artificial Intelligence</b> (2022-2024) · CGPA: 4.31/4.5	<i>Ajou University</i> Suwon, South Korea
<b>Bachelors of International Studies</b> (2018-2022) · CGPA: 3.75/4.5, President of United Students of Silk-Road University Network	<i>Hankuk University of Foreign Studies</i> Seoul, South Korea
<b>Software Engineering</b> (2015-2017) · 3 semesters of undergraduate studies, <b>#1 university in Ethiopia</b>	<i>Addis Ababa Institute of Technology</i> Addis Ababa, Ethiopia

## EXPERIENCE

<b>Researcher</b> <i>Database and Dependable Computing Lab</i>	2022 March - 2024 Feb <i>Ajou University, Suwon, S. Korea</i>
<b>Extracting Low-Resource Datasets for Affordable Adaptation of LLMs:</b>	
· Processed > 1000 TB of Common Crawl for < 2 \$, extracting SOTA monolingual datasets for 7 languages.	
· Improved multi-lingual LLMs using Quantized Low-Rank Adaptation (QLoRA) on consumer GPUs.	
<i>Published in Proceedings of Symposium of the Korean Institute of communications and Information Sciences.</i>	
<b>Generalized Output Spaces for Classifiers:</b>	
· Improved cross-domain/cross-task generalization of multi-modal classifiers by fusing descriptions of classes/tasks.	
· Achieved SOTA zero-shot performance on CIFAR, RCV1, 20 NG (under review for publication).	

## PROJECTS

<b>Information Retrieval for Low-Resource Languages</b> · Trained a BERT-like transformer Language-Model (LM) for IR for African languages. · Compared traditional IR approaches (tf-idf, BM25) vs SOTA approaches.	2022
<b>Open Source Contributions</b> · Added support for more languages to “AllTrans”, an android application translator. · Added extra languages to “Android-Auto-Localization”, to localize Android application’s resources.	2021

## TECHNICAL STRENGTHS

Programming Languages	Python (Advanced), Java (Intermediate), Shell Script (Beginner)
Machine Learning	Deep Neural Networks, Generative Models
Deep Learning Libraries	Pytorch, HuggingFace, Pandas, NumPy, Scikit-learn, SciPy
Mathematics & Statistics	Linear Algebra, Probability Theory, Hypothesis & Significance Testing
Typesetting & Version Control	Latex (Advanced), Git/Github (Intermediate)
Natural Language Processing(NLP)	Transformers(BERT, GPT, LLaMa), Large Language Modeling, Prompt Engineering, Question Answering
Computer Vision(CV)	Convolutional Neural Networks (CNNs), Object Detection and Recognition, CLIP, ViT, ResNet Models

## LANGUAGE SKILLS

English: TOEIC English Reading and Listening (2021)	<b>915/990 (Professional)</b>
Korean: 1-year Intensive Language Course (2018)	<b>Level 1-3</b>
Korean: TOPIK (2021)	<b>Level 4</b>

**CERTIFICATES, AWARDS & SCHOLARSHIPS**

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Academic Scholarship	Ajou Research Scholarship (2023) - <b>Recommended by HOD</b> as Excellent Student, BK Research Scholarship(2022-2024), Ajou Tuition Scholarship (2022-2024) HUFS Tuition Scholarship (2017-2022), <b>Exemplary Student Award</b> (2017)
Korean War Scholarship	Awarded by the Embassy of Republic of Korea(2026), Korean War and Military Police Widow’s Association (2020), Korean War Memorial Foundation (2017-2022), Memorial Association of UN Participation in Korean War (UNPK) (2023)
Certificates	KAIST-AAiT IT Training Course (2016), Intensive Korean Language Course, HUFS (2017-2018)

**RELEVANT MASTER’S COURSES**

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Advanced Artificial Intelligence, Advanced Machine Learning, Advanced Topics in Machine Learning (GNN), Advanced Computer Vision, Introduction to Natural Language Processing, Information Retrieval, Advanced Image Signal Processing, Industrial Mathematics Survey

**HOBBIES, VOLUNTEERING & INTERESTS**

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Volunteering for NGOs (Korean Saemul Undong Center, The Korea-Africa Foundation Festival, etc.), acting as Translator/Interpreter/tourguide at the Korean War Veterans Revisit Program, Barista at Hwacheon Ice Festival