



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 5968

I, the undersigned ask to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Computer Science Giovanni Degli Antoni**

Scientist- in - charge: **Prof. Samarati Pierangela**

[Name and surname]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Degife
Name	Worku Abebbe

PRESENT OCCUPATION

Appointment	Structure
University of Gondar	Lecturer

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	BSc. in Information System	University of Gondar	Jul 5, 2014
Specialization	Information Scystem	University of Gondar, Ethiopia	Jul 5, 2014
PhD	Ph.D. in Information management	National Taiwan Univesity of Science and Technology, Taiwan	Expected date of graduation, December 2023 to Jan 30, 2024
Master	MSc. in Information Technolgy	University of Gondar, Ethiopia	Dec 1, 2017
Certificate	Leadership	Lehigh University, USA	Aug 26, 2019
Degree of medical specialization	-	-	-
Degree of European specialization	-	-	-
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
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Mar 17, 2017	Ethiopian Informations Systems Professional (EISP) Working Group	Addis Ababa
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FOREIGN LANGUAGES

Languages	level of knowledge
English	C1
Amharic	C1
Geeze	A1

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2021	Recognition from the project leader titled Detection and Classification of COVID-19 disease: in Case of Ethiopia. The project works with the HiLCoE School of Computer Science and Technology and the Ministry of Health of Ethiopia.
2019	Global Village for Future Leaders from Lehigh University, Iacocca Institution, United States of America/USA
2019	PhD Scholarship from the National University of Science and Technology
2018	Higher Diploma Programme in Teaching Mythology
2015	Operational Research Protocol Development
2014	Best Student Laboratory Assistant

TRAINING OR RESEARCH ACTIVITY

<p>description of activity</p> <ol style="list-style-type: none">Determinants of Commodity Prices: A Machine Learning Predictive Modeling Approach for the Ethiopia Commodity Exchange This research involved employing machine learning techniques to analyze and predict commodity prices within the Ethiopia Commodity Exchange (ECX). The primary aim was to identify significant factors influencing price volatility and to create predictive models that could assist traders, policymakers, and stakeholders in making informed decisions.Detection and Classification of COVID-19 disease: in Case of Ethiopia The project aimed to detect and classify COVID-19 cases in Ethiopia using medical imaging and diagnostic data. A variety of machine learning algorithms were utilized to accurately diagnose COVID-19, which can help healthcare professionals to distinguish it promptly and reliably from other respiratory conditions.Predicting Chronic Non-Communicable Diseases Using Multi-Label Machine Learning Techniques This study developed machine learning models capable of predicting multiple chronic non-communicable diseases in patients concurrently. The goal was to establish a multi-label classification tool for healthcare providers to predict the likelihood of various diseases based on patient data, thus improving early detection and interventions.Real-Time Dynamic Pricing Using Model-Free Deep Reinforcement Learning Approach The research achieved the development of a real-time dynamic pricing mechanism using a model-free deep reinforcement learning approach. This innovative system, applicable across various industries, aimed at optimizing pricing in response to changing market conditions, consumer demand, and behavior without
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the need for a predefined model.

5. Risk management techniques in IT projects for junior software developers and postgraduate students

This initiative delivered a comprehensive series of training sessions on risk management specifically designed for junior software developers and postgraduate students. The program focused on imparting knowledge on various techniques and best practices for identifying, assessing, and mitigating risks throughout the IT project development lifecycle.

6. Practical Training on Agile Software Development

This training provided practical experience in agile software development methodologies. Participants were engaged with agile principles, frameworks, i.e. SCRUM, and their applications in real-world settings. The training enabled them to work effectively in agile teams, manage projects, and respond to changes adeptly.

7. Deep-Learning-Powered GRU Model for Flight Ticket Fare Forecasting

This study introduced a deep-learning-powered Gated Recurrent Unit (GRU) model for forecasting flight ticket fares. Recognizing the shortcomings of traditional prediction systems, the GRU model incorporated 44 decision features to grasp the complex interplay of factors influencing airfares. It proved superior to traditional machine learning models, including the Multilayer Perceptron (MLP) and Long Short-Term Memory (LSTM) networks, as indicated by its outperformance in key assessment indicators like MAE, RMSE, and R². This research demonstrated the GRU model's capability to predict flight fares with high accuracy, marking a significant step forward in the civil aviation industry.

8. Aspect-Informed GRU: A Hybrid Approach to Flight Fare Forecasting Leveraging Sentiment Scores and Historical Price Data

This research explored a hybrid approach to flight fare forecasting that combined Aspect-Based Sentiment Analysis (ABSA) with a Gated Recurrent Unit (GRU) deep learning architecture. The study compared the performance of six models, including MLP, ABSA_MLP, LSTM, ABSA_LSTM, GRU, and ABSA_GRU. The ABSA_GRU model emerged as the top performer, showcasing its remarkable predictive power through excellent RMSE, MAE, and R² scores. Although the model exhibited strong accuracy for short- to medium-term predictions, challenges in long-term forecasting were noted due to the increased RMSE and reduced R² beyond a 30-day horizon. This study thus contributed a nuanced approach to developing airline ticket pricing strategies aligned with market trends and consumer sentiments.

PROJECT ACTIVITY

Year	Project
2022	Detection and Classification of COVID-19 disease: in Case of Ethiopia
2016	Determinants of Commodity Prices: A Machine Learning Predictive Modeling Approach for the Ethiopia Commodity Exchange
2018	Event Recording System for GondarTown, Ethiopia.
2017	Vehicle Management System for the University of Gondar.
2016	Road map for Ethiopian ICT sectors.

CONGRESSES AND SEMINARS

Date	Title	Place
June 27,	The Role of Artificial Intelligence and Current Research Trends	Debire Berhan, Ethiopia



2023	in Computing	
Jun 07, 2019	Let's Talk about Project Cycle Management	Pennsylvania, USA
Mar 4, 2017	The Role And Position of Information Systems In The Computing Landscape.	Gondar, Ethiopia
Jul 2, 2016	MoST, NSTI Road map for ICT sectors.	Addis Ababa, Ethiopia

PUBLICATIONS

Degife WA, Lin BS. Deep-Learning-Powered GRU Model for Flight Ticket Fare Forecasting. Applied Sciences. 2023 May 14;13(10):6032. https://doi.org/10.3390/app13106032
[Degife WA, Sinamo A. Efficient predictive model for determining critical factors affecting commodity price: the case of coffee in Ethiopian Commodity Exchange (ECX). International Journal of Information Engineering and Electronic Business. 2019;11(6):32-6. https://doi.org/10.5815/ijieeb.2019.06.05
Ponnusamy R, Degife WA, Alemu T. Recommender frameworks outline system design and strategies: a review. Knowledge Computing and its Applications: Knowledge Computing in Specific Domains: Volume II. 2018:261-85. https://link.springer.com/chapter/10.1007/978-981-10-8258-0_12#citeas

- Additionally, I have researches works in progress that have not yet been published.

OTHER INFORMATION

	Name of company	Working Period		
		From	To	()years ()months
Work experience	ACT American College of Technology PLC (Lecturer in Computer Science Department for Computer Science course)	10/03/2021	1/1/2022	Nine months and three weeks
	University of Gondar (Lecturer in Information System)	09/01//2014	1/18/2019 4	Four years and five months

	Name of company	Position	Working Period		
			From	To	()years ()months
Leadership experience	ACT American College of Technology PLC	Head of the department	12/05/2016	30/12/2028	Nine months and three weeks
	ACT American College of Technology PLC	Acting dean	02/08/2021	1/1/2022	Five Months
	University of Gondar, Information System Department	Head of the department	09/01//2014	1/18/2019 4	Two years, seven months, and sixteen days



	University of Gondar	President of Students union	01/09/2013	30/08/2014	One year
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- Furthermore, I served in various capacities as the chair of several committees, including promotion, recruitment, community service, technology transfer, and research projects.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: **Nov 4, 2023**