

Espoir Kabanga

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Profile Summary

I am an experienced computer scientist with a passion for leveraging machine learning, deep learning, data science, and data analytics to drive innovation and solve complex challenges.

Professional Experience

Ghent University Global Campus

Incheon, Republic of Korea

Teaching and Research Assistant

August 2019 - Currently

As a teaching assistant, I am responsible for supervising two practical courses: Informatics, covering Python programming and Unix, and Bioinformatics, where I oversee the application of deep learning for the analysis of biological sequences. In my role as a research assistant, I contribute to the development of interpretable multitask models capable of learning simultaneously from various biological tasks. These models have the potential to significantly enhance our understanding of complex biological systems and facilitate the discovery of new biological knowledge. Additionally, as a research assistant, I also supervise senior students in completing their final projects.

Brain and Research Innovation, Ltd.

Seoul, Republic of Korea

Researcher and Software Developer

August 2018 - August 2019

I was involved in a project called 'Reader's Eye,' where I served as one of the lead developers of software designed to detect autism, dyslexia, and ADHD using an eye tracking device and a machine learning algorithm. The 'Reader's Eye' software is now in use in several primary and secondary schools as well as private academies in South Korea.

Information Security Gifted Education Center - Daegu Univeristy

Daegu, Republic of Korea

Visiting Lecturer

April 2018 - September 2022

I was responsible for teaching the fundamentals of artificial intelligence and computer security to graduating students from various middle and high schools across South Korea.

Daegu Univeristy

Daegu, Republic of Korea

Research Assistant

March 2018 - July 2018

After completing my master degree, I was employed as a full-time research assistant at Daegu University's Ubiquitous Computer and Security Lab, where I continued to conduct research on innovative deep learning techniques for the detection and classification of malicious software.

Education

Ghent University

Ghent, Belgium

PhD candidate in Computer Science Engineering

September 2021 - Currently

As a member of the Center for Biosystems and Biotech Data Science, I conduct research on the application of deep learning to analyze biological sequences and genomic data, with the aim of uncovering new biological knowledge that may lead to disease diagnosis or the discovery of certain medications.

Daegu University

Daegu, Republic of Korea

Master in Computer and Information Engineering

March 2016 - February 2018

As a member of the Ubiquitous Computer and Security Lab, I conducted research on the application of deep learning algorithms for the classification and prediction of malicious software (malware). My research work has been published in international journals and presented at international conferences.

Bangalore University

Bangalore, India

Bachelor in Computer Applications

May 2012 - April 2015

First class honor

Language Skills

English Professional proficiency

French Professional proficiency

Korean Professional proficiency

Swahili Native language

Lingala Native language

Technical and Interpersonal Skills

Programming	Python (Pandas, TensorFlow, NumPy, Scikit-learn. etc.), PHP, C/C++, HTML/CSS, JavaScript, SQL, C#.
Data and Analytics	Data analysis and organization, machine learning and deep learning, data visualization.
Research and Project Management	Research and innovation, project and results management.
Interdisciplinary and Collaboration	Interdisciplinary collaboration, cross-cultural communication.
Inerpersonal Skills	Time management, teamwork, problem solving, listening and communication skills.

Other Activities

Ghent University Global Campus

Incheon, Republic of Korea

Assistant Academic Personnel (AAP) Representative

2020 - 2021

As AAP Representative, I worked to rebuild and strengthen trust and communication between the AAP community and the leadership of Ghent University Global Campus. I actively participated in various decision-making meetings and offered solutions to daily challenges and concerns raised by AAP members. Through these efforts, I contributed to the well-being and overall satisfaction of the AAP community.

DECOC - www.decoc-elites.org

Republic of Korea

Vice President of the General Assembly

2019 - 2023

As the Vice President of the General Assembly of DECOC (Dynamique de l'Elite Congolaise en Corée du Sud), it was my responsibility to assist in the management and supervision of DECOC's activities, as well as the maintenance and oversight of the organization's assets and liabilities.

IGC African-Origin Community

Incheon, Republic of Korea

Representative

2020 - Currently

Since 2020, I have launched the African-Origin Community at IGC (Incheon Global Campus), a community focused on sharing information about life in the Songdo region to help individuals of African origin integrate more easily and have a more enjoyable experience in Songdo. I have also organized various activities for the community, including excursions across South Korea and group dinners. Through these efforts, my aim is to support the integration and well-being of individuals of African origin at IGC.

Daegu Vision Youth Club

Daegu, Republic of Korea

7th President

June 2018 - June 2019

The Daegu Vision Youth Club is a volunteer organization located in Daegu, South Korea. Comprised mainly of African students, the club is dedicated to providing free English, French, and African culture lessons to the local community. In addition to language instruction, the club also engages in activities such as visits to retirement homes in the Daegu area.

Publications

Towards Interpretable Multitask Learning for Splice Site and Translation Initiation Site Prediction

Espoir Kabanga, Arnout Van Messem, Wesley De Neve

Proceedings of the 18th Conference on Computational Intelligence Methods for Bioinformatics Biostatistics (CIBB 2023), 2023

Extractivism and Conflict: Comparative Study of Serbia and the DRC

Borislava Manojlovic, Espoir Kabanga

The Journal of Social Encounters 7 (2023), 2023

Discovering Biomarker Proteins and Peptides for Parkinson's Disease Prognosis Prediction with Machine Learning and Interpretability Methods

Ho-min Park, Espoir Kabanga, Dongin Moon, Minjae Chung, Jiwon Im, Yujin Kim, Arnout Van Messem, Wesley De Neve

bioRxiv (2023), Cold Spring Harbor Laboratory, 2023

Translation Initiation Site Prediction Using Deep Learning and Synthetic Datasets

Yunseol Park, Espoir Kabanga, Jasper Zuallaert, Hyunjin Shim, Arnout Van Messem, Wesley De Neve

29th Conference on Intelligence Systems for Molecular Biology / 20th European Conference on Computational Biology (ISMB/ECCB 2021 (2021), 2021

Malware Images Classification Using Convolutional Neural Network

Espoir K. Kabanga, Chang Hoon Kim

Journal of Computer and Communications 6 (2018), 2018

Classifying malware using convolutional gated neural network

Chang Hoon Kim, Espoir K. Kabanga, Sin-Jae Kang

2018 20th International Conference on Advanced Communication Technology (ICACT), 2018

Efficiency-Based Comparison on Malware Detection Techniques

Chang Hoon Kim, Kabanga E. Kamundala, Sinjae Kang

2018 International Conference on Platform Technology and Service (PlatCon), 2018

Invited Speaker

AI, Cybersecurity and Anomaly Detection

Korea System Assurance, Inc., Seoul, 2022

The Intersection of Artificial Intelligence and Cybersecurity

State University of New York, Korea (SUNY Korea), Songdo, 2022

Deep Learning for Splice Site Detection

Summer school, Machine Learning for Bioinformatics, HSE University, Russia (online), 2021