KABANGIRA DEVIS

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Education

- **Universite Laval** — Quebec, Canada
  PhD - Computer Science — *May 2026 - Current*

- **Daegu University** — Daegu, South Korea
  Master of Engineering - Information and Communication Engineering; GPA: 4.0/4.0 — *sept 2022 - Aug 2024*
  Thesis: *Recognizing challenging behavioral actions among children with developmental disabilities using Pose estimates and 3DCNN*
  Majors: *AI, Human action recognition, Deep Learning and computer vision*

- **Mbarara University of Science and Technology** — Mbarara, Uganda
  Bachelor of Science(Hons) - Information Technology; GPA: 4.40/5.0 — *Aug 2016 - Oct 2019*

Skills Summary

- **Languages** Python, C, JavaScript, JAVA
- **Data Science** Tensorflow, Pytorch, Keras, Scikit-learn, Numpy, pandas
- **Computer vision** Object Detection, Pose Estimation, Action Recognition, Object Tracking, Image Segmentation
- **Deep Learning Techniques** Convolutional Neural Networks (CNNs), RNNs, Graph Neural Networks (GNNs), LSTM
- **Soft Skills** Leadership, Event Management, Writing, Time Management

Professional Experience

- **CodeAlpha.Tech, Uttar Pradesh, India** — Remote
  Artificial Intelligence Engineer (Intern) — *Sept 2025 - Oct 2025*
  - Developed a multilingual translation model and intelligent chatbot using Transformer-based architectures to streamline communication tasks.
  - Implemented object detection systems using YOLOv7 and Faster R-CNN, integrated with DeepSORT to enhance multi-target tracking performance.

- **Elevvo.Tech Cairo, Egypt** — Remote
  Machine learning Engineer(Intern) — *Aug 2025 - Sept 2025*
  - Created a recommendation engine leveraging collaborative filtering and similarity metrics to enhance user personalization.
  - Engineered time-series forecasting models with XGBoost and LightGBM, reducing prediction error by 15% via advanced feature engineering
  - Designed and trained CNN-based classifiers for traffic sign recognition, reaching 96% validation accuracy through extensive hyperparameter tuning.

- **Next wave of Intelligence Lab, South Korea**
  Computer vision/Deep learning Engineer (Internship) — *July 2024 - Sept 2024*
  - Detected and tracked human activities in crowded environments using deep learning models,DeepSORT and Yolo.
  - Developed and optimized deep learning algorithms using Optimizers(SGD,Adam,RMSprop).This improved accuracy, speed, and Quantized models for real-time performance.
  - Carried out Human pose estimation and skeleton key point extraction using methods such as Openpose, Mediapipe and Posenet.

- **FCI Lab-Daegu University, South Korea**
  Graduate Researcher — *sept 2022 - July 2024*
  - Developed and trained custom YOLOv7 from scratch,implemented data augmentation pipelines (random cropping, perspective transforms, motion blur) to enhance robustness in high-density crowd scenarios.
  - Engineered an end-to-end real-time human action recognition pipeline integrating YOLOv7 for high-precision object detection, DeepSORT for robust multi-target tracking, and OpenPose for framewise skeleton keypoint extraction.
  - Architected and optimized deep learning pipelines (e.g., Pose-Conv3D, LSTM, CNN-LSTM architectures) to achieve state-of-the-art accuracy in detecting and classifying challenging behavioral actions in multi-person, real-world environments.
  - Led the design and execution of a novel Challenging Behavioral Action Dataset in collaboration with the Future Intelligent Computing Lab (FICL) and Daegu University, incorporating advanced annotation protocols and ensuring high inter- rater reliability for spatio-temporal action analysis.
  - Applied multimodal fusion techniques integrating skeleton-based pose estimation (OpenPose, MediaPipe) with temporal motion cues to enhance robustness under occlusion, variable lighting, and complex movement patterns.

- **Ministry of Edution and Sports, Uganda**
  IT/Software Engineer (Intern) — *June 2018 - Aug 2018*
  - Processed and cleaned large-scale educational datasets, ensuring data readiness for national e-learning initiatives.
  - Supported website maintenance and QA testing, contributing to improved performance and reliability of government digital platforms.

PRESENTATION

- A Hybrid approach of Lstm and Naive Baiyes for Human activity recognition in Uzbekistan. International Conference on Information, Systems and convergence Application,2023 Uzbekistan (ICISCA '23).**Online**
- Real-time multi-Human Tracking and Spatio-Temporal Action Recognition based on Framewise Joints. The Alan Turing Institute Workshop at the IEEE CAI' Singapore,2024.**OnSite**
- Real-time Skeleton-based human action detection and recognition based on Openpose. [Online]. International Conference on Information, Systems and convergence Application, India 2024 (ICISCA '24).**Online**

Publications

- D. Kabangira and Y. Oh, 'Detecting and Tracking People in Crowded Environments with YOLOv7 and DeepSORT', Nanotechnology Perceptions, vol. 20, no. 7, Art. no.7, Dec. 2024, doi: 10.62441/nano-ntp.v20i7.3817. Link

Certifications and Awards

- Global Korea Scholarship(GKS) award - (July 2021-Aug 2024)
- Certificate of completion "Complete AI and Machine Learning, Data Science Bootcamp" - March, 2024
- Certificate of completion "Pytorch for Deep learning Bootcamp" *Udemy* - March, 2024
- 100 Days of Code: The complete python pro Bootcamp, *Udemy* - January, 2025
- Deep Learning Applications for Computer Vision, *Coursera(University of Colorado Boulder)* - August, 2025
- Google AI Essentials V1, *Coursera(Google)* - August, 2025
- IBM Machine Learning with Python,Coursera(IBM) - September, 2025