

# Jules Udahemuka

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## SUMMARY

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Data-driven decision-maker specialized in AI solutions, with expertise in analytics, and ML/AI. My research in Multimodal Learning and Computer Vision includes developing algorithms that integrate visual and textual data, and applying deep learning to real-time image analysis. This work has applications in autonomous driving, medical imaging, and video surveillance. I seek a role that aligns with my passion for AI/ML and analytics.

## EDUCATION

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- **Carnegie Mellon University** Rwanda, Africa Campus  
*Master of Science in Engineering Artificial Intelligence; GPA: 3.7/4.0* *Aug. 2023 – May. 2025*
- **University of Rwanda** Rwanda, College of Science and Tech  
*Bachelor of Science in Environmental Engineering; GPA: 3.4/4.0* *Aug. 2013 – July. 2017*

## EXPERIENCE

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- **Babylon Health** Rwanda  
*Data Scientist* *Jun. 2022 - Jul. 2023*
  - **ML for Revenue Optimization:** Led strategies and analyses across different departments, leveraging ML to optimize clinical operations, resulting in a **13.4% revenue increase** by minimizing unpaid consultations.
  - **Decreased Fraudulent Activities:** Decreased fraudulent consultations by **99.9%** through data-driven performance management strategies, defining metrics, and analyzing various data points.
  - **Built Dashboards:** Developed custom dashboards, enabling teams to make informed day-to-day performance decisions and drive business results.
- **Bboxx** Rwanda  
*BI & Analytics Engineer* *Feb. 2020 - May. 2022*
  - **Designed and Built Data Warehouse:** Played a key role in designing and implementing robust ETL processes using dbt, enhancing decentralized data integration from diverse sources and systems, and ensuring data accuracy.
  - **Developed Dashboards:** Created 5 Power BI dashboards with over 40 worksheets, enabling management and employees to make data-informed business decisions.
  - **Won Internal Hackathon:** Partnered on an internal hackathon machine learning project, predicting defaulters and achieving a **14.2% reduction**.
- **One Acre Fund** Rwanda  
*Data Analyst, Marketing* *May. 2017 - Jun. 2020*
  - **Increased Product Adoption:** Spearheaded data-driven marketing strategies, increasing adoption rates by **17.7%** in six months through research and segmentation strategies.
  - **Optimized Operations:** Optimized retail expansion efforts, overseeing growth from 4 to 100 stores across the country in two years, supported by decentralized data gathering and live data visualization tools.
  - **Increased Retention:** Developed and implemented retention strategy, raising retention rates from **82% to 93%** during the COVID-19 lockdown period.

## PROJECTS

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- **Drones Computer Vision:** Developed an open-source project for analyzing drone footage and applying computer vision techniques like YOLO and Faster R-CNN for real-time object detection and tracking. [{CODE}](#)
- **Digital Twin for Climate Change:** Created a digital twin framework using AI and simulation to model and visualize the potential impacts of climate change on the African continent. [{CODE}](#)
- **Securing USSD Systems with Machine Learning:** Implemented unsupervised anomaly detection algorithms and supervised fraud prediction models to enhance the security of USSD mobile money systems in Africa. [{CODE}](#) | [{Paper}](#)

## SKILLS

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**Programming Languages:** Python, C++, SQL

**ML/AI Frameworks:** TensorFlow, PyTorch, OpenCV, HuggingFace Transformers

**Data Analytics/BI:** dbt, Power BI, Tableau

**Other Skills:** Deep Learning, Computer Vision, NLP, MLOps, Data Warehousing, Dashboarding