KLINSMANN AGYEI

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https://github.com/Klins101

Education

2022-2024 **M.S., Robotics and Artificial Intelligence**
ITMO University

2015-2019 **B.S., Mechanical Engineering**
University of Energy and Natural Resources

Research Experience

Team exploration and task allocation on graphs using spectral decomposition and Deep Reinforcement Learning. *Link*
Klinsmann Agyei, Alexey Vedyakov
ITMO University, 2024

Study of Control algorithms for robotic systems based on reinforcement Learning
Klinsmann Agyei, Alexey Vedyakov
ITMO University, 2024

New Horizon, Quantitative behavioral models
Klinsmann Agyei, Alberto Buccellato, Greg Ciresi
WorldQuant University, 2022

Design and Fabrication of an electric power amplifier
Klinsmann Agyei, Peter Tokor Sobuur, Christopher Morimaha, Nana Agyemang Derkyi
University of Energy and Natural Resources, 2019

Teaching Experience

Instructor Robotics Club, UENR-2018
Taught the fundamentals of robotics and programming to new students and undergraduate enthusiasts in the field of robotics.

Instructor Design Club, UENR-2018
Taught new students and undergraduate Design enthusiasts on the utilization of SolidWorks for 3D modeling.

Awards and Scholarships

Newmont Ghana Scholarship, for needy but brilliant students, 2015-2019
Russian Government Scholarship, 2022-2024
Winner of Open Doors Russian Competition for Engineering and Technology
Citation of Honor for my remarkable initiative in initiating the formation of the robotics and design club, providing a platform for students to explore their passion for Robotics, CAD and engineering, MESA-UENR, 2018
Citation of Honor for insightful, dedicative attitude, skills and instrumental role in the parliamentary council and reinvention of the UENR SRC, 2018

Work History

***May - September* 2023** — **Robotics Engineer, Intern**

Void Robotics, USA-Remote.

- Contributed to building an Operating system for autonomous transportation of robot using ROS2, Arduino and a GPS based navigation system.
- Enhanced the Real-Time Kinematic (RTK) GPS library by transitioning from version 2 to version 3, while also revising and adapting existing code syntaxes to align with the requirements of version 3. Subsequently, thorough testing of the upgraded library was conducted on a remote system utilizing secure shell (SSH) protocol.
- Utilized GitHub Actions to orchestrate the building of ROS2 within Ubuntu 22.04 Docker image. This encompassed constructing the project workspace and executing comprehensive tests to validate the robot simulation subsequent to each code push to a designated branch within the GitHub repository.
- Integrated the ROS 2 Nav2 framework along with the Spatio-Temporal Voxel Layer(STVL) to depict the environment using the vortex grid format. Since STVL was not available for ROS humble.

2022 — **Open-Source Software Developer**

Deep Ivy, Unify AI

- Reformatted old Python Machine Learning functions to comply with the Python array API standards on the deep ivy framework.
- Created issues and sent pull requests after finding and fixing issues on the open-source ivy machine learning framework on GitHub.

2020 - 2022 — **Software Engineer - Data Science**

AmaliTech GmbH, Takoradi-Ghana.

- Developed an LSTM and CNN combination model in addition to OpenCV's classical Computer Vision framework to extract part of the video when riders are speeding and the part where they encounter a curve from a video.
- Developed an object detection model with Yolov5, and PyTorch to detect objects on the driveway such as cars, bicycles, humans, and so on.
- Used Labelme image annotation to label or annotate road lanes and objects in images to be used for the object detection algorithm
- Responsible for scrapping app reviews from popular apps and performing a sentiment analysis on them using transfer learning from hugging face transformer library.
- Implemented Python's Google Play scraper to get user reviews from various apps from google play store and saved the data into a CSV file using python's pandas library.
- Prepared a custom dataset for face detection with Detectron2 using the Labelme annotation tool.

ONLINE COURCES

COEX
Aerial Robotics - **Beginner**

WorldQuant University
M.S. Financial Engineering
Applied Data Science - **Advanced**

France Université Numérique
Machine Learning in Python with scikit-learn - **Advanced.**

Codeacademy
Data Scientist Career Path Certification - **Intermediate**
Data Analytics Career Path Certification- **Intermediate**
Design Databases with PostgreSQL- **Intermediate**
Analyze Data with SQL - **Intermediate**
Build Machine Learning Model with Python - **Intermediate**
Build Deep Learning Model with TensorFlow - **Intermediate**
Master Statistics with Python - **Intermediate**
Visualize Data with Python - **Intermediate**
Analyze Natural Language Processing with Python - **Intermediate**

Udacity
AWS Machine Learning Foundation - **Beginner**

Skill Set

Programming Languages: Python: Advanced, C++: Intermediate, MATLAB: Intermediate
Frameworks and Libraries: PyTorch, TensorFlow, sci-kit learn, OpenCV(python & C++) , Pandas, Matplotlib, Ivy, Seaborn, Jax, NumPy, SciPy, SymPy.
Utils: Bash, Git, Docker, make (catkin, colcon)
Communication: ROS 1 and ROS 2
CAD and Simulators: Unity, SolidWorks, Gazebo, Simscape Multibody, Coppeliasim, PyBullet
Operating System: Linux, Windows.
Languages: English: Native, French: Beginner, Russian: Beginner

Leadership and Extra Curriculum Activities

2017/2018 — **President**
Mechanical Engineering Students' Association, UENR

2017-2018 — **Coordinator**
West African Institute of Mining, Metallurgy and Petroleum, UENR

2017-2018 — **Member**
Ghana Institute of Engineers, Student Chapter

2014/2015 — **Member**
National Science and Maths Quiz Team, Labone Senior High School

2014-2015 — **Member**
National Robotics Competition Team, Labone Senior High School