Justin Takodjou

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Québec-Canada

GitHub

ABOUT

Passionate about geomatics for nearly 7 years, I have cultivated a broad expertise through professional and academic experiences, combining work, studies, and continuous learning to stay at the forefront of technological advancements. My skill set spans software development, artificial intelligence, big data processing, Retrieval-Augmented Generation (RAG), Large Language Models (LLM), and web and mobile development.

Dedicated to lifelong learning, I have completed training in spatial data science, WebGIS, and cloud computing (Esri MOOCs, Udemy, Coursera). During my bachelor's in geomatics engineering, I specialized in big data processing, machine learning, and deep learning, which solidified my passion for AI and shaped my career aspirations.

I am now eager to focus on a specific domain, such as data science, software development, artificial intelligence, or cloud computing, to build a successful and impactful career. My strong foundation in programming, including Test-Driven Development (TDD) and SOLID principles, further supports my ability to deliver innovative solutions.

I invite you to explore my projects on Linkedin and my Youtube channel, where I share my knowledge and insights.

If you're looking for a young professional who loves solving problems with passion and staying at the forefront of technology, you've found me.

PROJECTS

Chatbot App   2024

Personal Project, Quebec-Canada

- Develop an AI agent that can interact with my insurance policy and remember previous prompts.
- Technology: LangChain, Vectorstore, Embedding, LLM, RAG, Streamlit
- Links: GitHub

Object Detection Model Creation   2024

Personal Project, Quebec-Canada

- Trained a model using YOLOv8 to detect objects such as glasses, chains, watches, and rings.
- Link : LinkedIn

Facebook Comment Response Prediction Model   2024

Big Data Processing (GLO-4027), Quebec-Canada

- Analyzed and preprocessed data obtained from Facebook's Graph API.
- Tested algorithms (Naive Bayes, Decision Tree, and SVM).
- Trained and optimized the selected algorithm.
- Tools: Pandas, NumPy, Matplotlib & Scikit-learn.
- Link: [Projets](#) (French)

Development of a Mobile Application for Indoor Positioning using BLE Technology & Flutter

2023-2024

Canada Research Chair in Smart and Inclusive Cities and Mobility, Quebec

- Data cleaning of raw floor data (shapefiles, GeoJSON, excel etc...) and integrations (data conversion, reprojections, and quality control)
- Proximity analysis and installation of Bluetooth beacons based on signal strength, range and obstructions
- Floor mapping and creation of the graph network for each floor, followed by the creation of a graph network allowing navigation between floors based on the user's physical condition (walking, wheelchair, etc...)
- Positioning calculation based on signals emitted by the beacon and optimization
- Application development inspired by Google Maps and incorporating the ability to change floors
- Link : [LinkedIn](#)

RELEVANT EXPERIENCES

Software Developer   Since 2024

Pavemetrics Systems Inc., Quebec – R&D

- Developed a web application for real-time tracking of trucks collecting rail data and monitoring system status (camera, laser, GPS, etc.) using Supabase, Leaflet, and React
- Developed an ETL to extract, transform (GeoJSON), and store data in a spatial database, along with a web application that enables selection and display of metadata by location to facilitate access to data for training machine learning models (JavaScript, Leaflet, Flask API, HTML, CSS)
- Participated in software selection meetings with Esri & Geo Generateur to evaluate and recommend the best GIS solutions suited to client needs
- Defined appropriate software architectures to ensure the maintainability and scalability of projects in the long term
- Supported the organization in all geomatics-related decisions as the sole internal expert

Geomatics Intern   2022-2024
Pavemetrics Systems Inc., Quebec – R&D

- Created, managed, and maintained spatial databases using PostgreSQL, Python and C# (Asynchronous programming)
- Developed and maintained several QGIS plugins for rail inspection using Python & Qt Designer
- Automated complex tasks using Python in QGIS (PyQGIS), enhancing workflow efficiency
- Conducted advanced spatial analysis on rail data to support decision-making
- Developed robust web applications utilizing GeoServer, Leaflet, HTML/CSS, JavaScript, Python (Flask) for data retrieval
- Automated repetitive tasks using ModelBuilder, and for less complex tasks, I utilized Graphical Modeler
- Resolved various GIS-related issues

Geomatics Technician   2021-2022
Geolocation, Quebec

- Perform LIDAR data processing using MicroStation and TerraScan/TerraModeler modules

Surveying Technician   2017-2019
NGOMEZ Enginnering, Yaounde-Cameroun

- Executed LiDAR projects: set up control points (GCP) and GPS observations.
- Conducted photogrammetric surveys.
- Land surveying: prepared location certificates and property certificates.
- Tools: Total station, drone, and GPS.
- Software: AutoCAD, Trimble Business Center.

EDUCATION

Bachelor's degree in Geomatics Engineering   2024
Université Laval, Québec, Canada

Technician Certificate in Surveying and Mapping   2019
Lycée Technique de Nkolbisson, Yaoundé-Cameroun

SPECIFIC SKILLS

Languages: French (Advanced), English (Advanced)
Computer: Python, C#, Javascript, Docker, Gitlab, flutter, dart, React, Supabase, Matlab
Geomatics: PostGreSQL/PostGIS, QGIS, ArcGIS, & TBC, FME, Autocad
Tools and Instruments: GNSS Receiver, Total Station, Drone, Auto Level/Dumpy Level

Professional Development:

- Make an Impat with Modern Geo Apps, ESRI, 2024
- Spatial Data Science: The New Frontier in Analytics, ESRI, 2024
- WebGIS: From Beginner to Advanced, Md. Touhidur Rahman, 2024
- Spatial Data Science: The New Frontier in Analytics, ESRI, 2022
- Getting Started with Geoprocessing, ESRI, 2022
- Going Places with Spatial Analysis, ESRI, 2022
- Cartography, ESRI, 2022
- GNSS positioning calculations and adjustments, Home made school (Yaoundé-Cameroun), 2019
- DRONE MAPPING, GISCAM (Yaoundé-Cameroun), 2019
- DRONE MAPPING, HOME MADE SCHOOL (Yaoundé-Cameroun), 2018

AWARDS AND DISTINCTIONS

The Geomatics Emerging Talent Scholarship   2024

- We developed a mobile application for indoor navigation and won this award in competition with students from professional and research master's programs.

Excellence Scholarships - Global Citizens   2023

- Aims to support international students with strong academic records.

Francois Valois Scholarship - Excellence in Geomatics Engineering   2023

- Aims to support a student in Geomatics Engineering who demonstrates an excellent academic record.

Academic Excellence   2019

- Top student of the entire institution, awarded books, notebooks, and free training in computer science.

Academic Excellence   2018

- Top student of the entire institution, awarded books, notebooks, and free training in computer science.

Academic Excellence   2017

- Top student of the entire institution, awarded books, notebooks, and free training in computer science.