

Virtufit: An AI Powered Virtual Fitness Supplication

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Abstract

VirtuFit, developed by students at the University of Wollongong in Dubai and mentored by Dr. Patrick Mukala, is a revolutionary android app transforming 21st-century fitness. It caters to various users, from beginners seeking motivation to fitness enthusiasts needing tailored routines. The app is particularly suitable for those preferring privacy and requires workouts adaptable to busy schedules or specific health conditions. Central to VirtuFit are three innovative features: a Chat Bot, Form Monitor, and Scheduling system. The Chat Bot, powered by Python and OpenAI's library, acts as an intelligent assistant, providing instant, smart responses. The Form Monitor, built with JavaScript and React Native's human pose library, offers advanced movement analysis for a safer, more effective workout, ensuring proper technique. The Scheduling feature combines procedural programming and rule-based algorithms to create personalized fitness plans that consider individual goals and time availability. VirtuFit's primary goal is to meet diverse user needs through a unified platform. It acknowledges varied fitness motivations like health, personal interest, or societal standards. By focusing on personalization, the app maximizes user benefits, offering tailored workout plans and interactive virtual trainer sessions. Ultimately, VirtuFit is more than a fitness app; it's an adaptable, user-centric solution, redefining personal health and wellness for today's world.

Keywords

Revolutionary Fitness App, Chat Bot, Form Monitor, Scheduling System.

Biographies

Dani Ternanni is a big data undergraduate student at the University of Wollongong in Dubai (UOWD). He is currently in his 4th and final year. He just won 1st place at the UOWD annual innovation fair alongside his team members. In 2022, Dani was on the Dean's Merit List 2021 for his academic performance.

Fatima Aya TchanTchane is a big data graduate. Aya has recently graduated from UOWD and participated in the Computer Science innovation fair where she won first place.

Noor Ahmed is a computer science graduate with specialization in cyber security from university of Wollongong in Dubai. Acquired first place in WISP for solution for animal fur used in fashion industry and representing it in Colloquium on business & technology for social change, UOW Australia. Has also contributed to university life by joining the student-representatives council.

Ali Mela Ali is a big data undergraduate student, in his final year studying at the University of Wollongong in Dubai. He has completed notable projects like building a data lake for a local company using Azure services and getting 1st place at the UOWD annual innovation fair for his capstone project.

Abdullah Rafiei is a 3rd year computer science student at the university of Wollongong. Abdullah's most recent achievement involved getting first place at the innovation fair. During the project innovation fair Abdullah was the scribe.

Patrick Mukala is an Assistant Professor of Artificial Intelligence and Data Science. With a background and training in Computer Science, He teaches computer science courses and conduct research pertaining to AI and Data Engineering. He holds a double PhD in Computer Science. His research interests are in AI for Data and Process analytics (Applied Analytics) and Software Engineering. In Applied Analytics, his interests are in Learning Analytics, Process-Centric Analytics, Healthcare Analytics and Governance analytics. The objectives of these research endeavors are centered around understanding and determining the appropriateness of analytics techniques regarding current data analysis demands as demonstrated by issues in the real world; developing and providing novel process-centric paradigms for data analysis and their application; as well as working in close collaboration with industry to understand the demands and provide timely and relevant solutions thereto. He also does extensive work in semantic web, abstract state machines, model checking and automata theory. Dr Mukala has numerous years in research and teaching from the Tshwane University of Technology in South Africa, the Technical University of Eindhoven, and the Fontys University of Applied sciences in the Netherlands. For over 5 years, He worked for several companies in the Netherlands in various capacities in data architecting, data engineering, data science and AI.