Mohamed Lahfir

+1 (571) 587-8964 | nmhlahfir2@gmail.com | linkedin.com/in/lahfir | github.com/lahfir

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, HTML/CSS, MQL4
Frameworks: Node.js, Flask, NextJS, Tailwind, Bootstrap, React Native, React JS, NextJS, Selenium, FastAPI
Libraries: JQuery, Redux, Swagger
Databases: MongoDB, MySQL, PostgreSQL
UI/UX: Figma, Adobe XD
Cloud: AWS S3, Firebase, Supabase, Google Cloud (GCE, SQL, VertexAI), AWS (ECR, ECS, S3, RDS, SES, Route53)
AI APIs: ElevenLabs, OpenAI, Coqui TTS
Developer Tools: Git, VS Code, Docker, Kubernetes, Android Studio, Xcode, Jira, Asana

EDUCATION

George Mason University   Fairfax,VA USA
Masters in Computer Software Engineering   *Jan. 2024 – May 2026*
- GPA - In Progress

PSG College of Technology   Coimbatore, India
BTech in Information Technology   *Aug. 2019 – May 2023*
- CGPA -   8.22/10.00

EXPERIENCE

Project Manager (Remote)   December 2022 – Aug 2023
Swiss Forex Trading SA   *Lugano, Ticino, CH*
- Successfully reduced the version 2 project timeline by implementing efficient development processes, optimizing resource allocation, and promoting effective communication within the team.
- Identified opportunities for improvement in the integration of the **MT4 socket** functionality and devised innovative solutions, resulting in faster and more reliable market data updates for traders.
- Proactively collaborated with stakeholders to gather requirements and provided multiple options and recommendations to address their needs, ensuring alignment with business objectives and enhancing customer satisfaction.
- Conducted regular project meetings to facilitate communication and provide status updates to the team, fostering a collaborative and transparent working environment.
- Successfully resolved critical issues and bottlenecks by leveraging **strong problem-solving skills** and effectively coordinating cross-functional teams, ensuring timely project delivery.
- Introduced and managed a **comprehensive bug tracking system,** reducing the number of reported issues and enhancing overall application stability.
- Conducted thorough testing and quality assurance procedures to ensure the mobile application met the highest standards of **performance, usability, and reliability.**
- Implemented a **feedback loop with end-users,** gathering valuable insights to drive continuous improvement and inform future development iterations.
- Proactively identified and mitigated risks, anticipating potential issues and implementing contingency plans to minimize disruptions to the project timeline.

Front-end Developer (Remote)   December 2021 – December 2022
Swiss Forex Trading SA   *Lugano, Ticino, CH*
- Developed and launched a cross-platform mobile application using the React Native framework, resulting in over **400 active users** and an average rating of **4.5** on the App Store
- Accelerated the app's performance by optimizing scrolling to **60 frames per second**, reducing the number of re-renders, and ensuring uninterrupted interaction
- Implemented real-time messaging functionality using sockets and integrated with the currency.com market API, enabling users to send and receive messages instantly and receive market data updates in **milliseconds**
- Integrating Firebase messaging functionality allowed for **real-time notifications** on both iOS and Android operating systems, improving communication for all users

- Adhered to the **MVC** architecture pattern for code organization, resulting in a clean and manageable codebase
- Integrated the **Stripe** payment API for collecting and managing payments within the app, streamlining financial transactions for users
- Integrated **Meta Trader 4** APIs for real-time trading functionality, providing up-to-date information for traders
- Implemented **In-App Purchases** for users to subscribe to premium features, increasing revenue for the company

Intern — CV based Animal Intrusion Detection and Prevention   March 2022 – May 2022

DST, Govt. of India   *India*

- Developed a Computer Vision model using **YoloV5s** with a prediction accuracy of **78%**
- Advanced the learning of the parent model to the student model using knowledge distillation methodology, resulting in an accuracy improvement of **2%** and a reduction of model size by **20%** for deployment on edge devices such as Raspberry Pi or Jetson Nano
- Implemented Re-Identification functionality with a **98%** accuracy using **Siamese Neural Network**, significantly increasing the number of unique animals identified by the system.

PARTNERSHIPS

In addition to my extensive technical skills and experience, I have fostered collaborative partnerships with pioneering startups at the cutting edge of AI innovation. Through these collaborations, I've harnessed the capabilities of Advanced Language Models (LLMs), speech synthesis, and computer vision technologies, contributing to groundbreaking projects that are reshaping the technology landscape.

Senior Developer & Backend Architect   AI-Powered Personal Assistant

Titan AI   *Las Vegas, NV*

- Titan AI is at the forefront of AI-driven personal assistant technology. Leveraging cutting-edge **LLMs, Speech, and Vision Models**, I was pivotal in crafting the sophisticated **backend infrastructure** that powers Titan AI's services.
- Implemented advanced algorithms using **Large Language Models**, **speech recognition**, **speaker diarization**, and **image processing** technologies to ensure intelligent, secure, and high-performance interactions for users. This project has established new standards in seamless and intelligent user engagement with virtual assistants.
- Utilized **FastAPI** to design and deploy highly efficient, scalable API solutions that facilitate robust, real-time data handling and improve the responsiveness of our AI-driven services.
- Engineered a distributed system architecture that enhances the scalability and reliability of our platform, supporting the seamless integration of AI technologies and handling millions of requests efficiently.

Backend Architect   AI-Powered Athlete Workout Application

Gainz.ai   *London, England*

- Gainz.ai is not just a fitness application; it is a revolutionary platform that stands at the crossroads of AI innovation and athletic performance optimization. As the Backend Architect, I've played a pivotal role in bringing the following features to life:
- **Train with Your Favorite Athletes:** Gainz.ai offers a personalized training experience, allowing users to train with top athletes across various sports, ensuring a premium and motivational workout environment.
- **Interactive Workout Experience:** The platform is designed to be more than just a workout – it is a transformative and engaging experience, pushing users to achieve their fitness goals.
- **AI-Powered Precision:** Utilizing next-gen AI technology, Gainz.ai delivers tailor-made workout plans, sculpted to meet the unique needs and goals of each individual, ensuring optimized results.
- **Unleash Peak Potential:** Gainz.ai provides insightful data behind every rep, set, and sweat, empowering users to understand more and subsequently grow more.
- **All-in-One Fitness Hub:** The platform serves as a comprehensive fitness hub, where users can track, train, and triumph, all under one digital roof.
- **Real-Time Performance Feedback:** With live feedback during every step, lift, and sprint, Gainz.ai ensures that users are on the right track toward achieving their fitness goals.

Full-Stack Developer   Advanced AI-Powered Speech Synthesis Platform

Speaknix   *London, England*

- Speaknix, developed in collaboration with **ElevenLabs**, stands as a testament to the limitless possibilities of **AI-driven speech synthesis.** I've led the development of a comprehensive full-stack web application, allowing users to **clone voices, convert text to speech, and explore advanced speech functionalities.**
- This venture has pushed the boundaries of NLP and auditory communication, creating a powerful tool that revolutionizes the way we perceive and interact with speech synthesis.

Projects

Apple VisionOS App - Exploration | *VisionOS, SwiftUI*   June 2023
- Proactively engaged in an immersive learning experience to master the cutting-edge **VisionOS SDK,** demonstrating a passion for staying at the forefront of emerging technologies and innovation.
- Developed a sophisticated to-do list application specifically tailored for the **VisionPro device**, showcasing a deep understanding of the VisionOS framework and its capabilities.
- Demonstrated a comprehensive understanding of **ImmersiveView APIs**, harnessing their power to create captivating and engaging user experiences that seamlessly blend the digital and physical worlds.
- Exhibited a strong grasp of the intricacies of the Reality Composer Pro app, leveraging its functionalities to explore and manipulate **USDZ models** within a 3D environment.
- Skillfully integrated USDZ models into the app's environment, employing expert-level animation and transformation techniques to create dynamic and visually striking experiences.
- *Demonstrated a commitment to continuous learning and personal growth, actively seeking out opportunities to expand knowledge and expertise in emerging technologies and frameworks.*

E-Mess | *Python Flask, HTML, CSS, Js, JQuery, Heroku*June 2021

- Developed REST API for communication between frontend and backend, enabling real-time updates for the client app from the admin module
- Implemented **JW T** for secure user authentication
- Created a CRM for admin module with features such as managing student and mess operations
- Improved efficiency and reduced errors by introducing a **CRM** dashboard
- Implemented PWA functionality, resulting in **50 active student users** per day
- Improved the manual process with a **100%** digital conversion, using the CRM dashboard
- **Link to the project :** e-mess.vercel.app/

Audio Transcriber with OpenAI Whisper API | *ReactJS, Flask*   May 2023
- Developed a full-stack web app for transcribing audios using OpenAIs Whisper API
- Implemented **English, Any to English, Non-English** transcriptions
- Developed multiple micro-services to handle different API requests
- Conducted comprehensive unit testing and debugging, resulting in a reliable and error-free application.
- Employed ReactJS for front-end development, ensuring a responsive and intuitive user interface.
- Utilized Flask, a Python microframework, to develop multiple micro-services that efficiently handled different API requests, enhancing the application's scalability and performance.
- Conducted comprehensive unit testing and debugging, resulting in a reliable and error-free application.
- Integrated robust error handling mechanisms, ensuring seamless handling and logging of API errors, enhancing overall application stability.

Working On

Assistant Framework Package for LLAMA | *Python*
- Developed a **Python package** that enables the integration of conversational AI features, mimicking advanced systems like OpenAI's GPT with open-source models such as LLAMA3.
- Designed a **state management system** within the package to maintain persistent conversation contexts, enhancing user interaction continuity.
- Implemented **multi-threading** to manage simultaneous conversation threads, improving scalability and user engagement.
- Created a lightweight, easy-to-integrate system facilitating the use of **conversational AI capabilities** in various applications without the need for complex backend setups.
- Included **OAuth capabilities** for secure user authentication and session management directly within the package.

Speech Diarization - Speaker Identification using Nvidia Nemo | *Python*
- Orchestrated the development of a cutting-edge Speech Diarization system leveraging Nvidia Nemo, a state-of-the-art deep learning framework, to accurately identify and differentiate multiple speakers in audio recordings.

- Integrated Nvidia Nemo's advanced speech processing capabilities, including **speaker embedding** models and **automatic speech recognition,** to extract unique speaker characteristics and accurately distinguish between multiple speakers in audio recordings.
- Planning to leverage Nvidia's powerful GPU acceleration capabilities to enhance the performance and speed of the speech diarization algorithms, enabling **real-time** or near real-time speaker identification in various audio contexts.

- Leveraged Nvidia Nemo's extensive pre-trained models and libraries for efficient model training and transfer learning, significantly reducing the development time and improving the overall performance of the speech diarization system.