Leo Senai

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Education

Northeastern University   Boston, MA
*MS, Computer Science; **GPA: 3.97***   *December 2024*
- **Related Courses:** Web Development; Data Mining; Natural Language Processing; Foundations of AI; Algorithms; Object-Oriented Programming; Database Management Systems; Fundamentals of Cloud Computing.
- MLK Jr. Graduate Fellow, J.D. O'Bryant African American Institute. Public service scholarship.
- GEM Board Fellow, The National GEM Consortium. National scholarship for underrepresented groups in STEM.

George Washington University   Washington, DC
BA, International Affairs

Technical Skills

Programming Languages: JavaScript/TypeScript, HTML/CSS, Python, C, Java, Linux shell
Frameworks & Libraries: Express.js, React.js, Node.js, Svelte, PyTorch, NumPy, Pandas, TensorFlow, BeautifulSoup, JUnit
Databases: MySQL, MongoDB, Airtable
Cloud Services: AWS Architecture
Soft Skills: Project management; sales; technical writing; client-facing interactions; cross-functional collaboration

Technical Projects

Meet-up Web App for Fair Travel Time | *SvelteKit, Google Maps API, TypeScript*   February 2025 - Ongoing
- Developing a web application that allows groups (2-10 people) to input their locations and transportation modes, then suggests optimal meet-up spots (e.g., bars, restaurants) with roughly equalized travel times.
- Implemented a dynamic map interface using SvelteKit and Google Maps API, enabling real-time location entry, marker visualization, and travel time estimates.
- Designed a backend API to fetch travel time data via Google's Distance Matrix API and process it using a fairness-driven algorithm inspired by minimax optimization.
- Upcoming enhancements include refining UI/UX, integrating alternative transport modes, persistent sessions, and evaluating open-source routing alternatives for cost-effective API calls.

'Kanbas' Learning Management System | *MongoDB, Express, React, Node (MERN), TypeScript*   Jan 2024 – Apr 2024
- Developed a fully functional web application modeled after a popular LMS utilizing the MERN stack (TypeScript).

'Bookworm' Book Review Website | *MongoDB, Express, React, Node (MERN), TypeScript*   Apr 2024
- Built a social media book-review website using the MERN stack (TypeScript).
- Developed complete server-side architecture using Node/Express and led front-end development of user profile page and related features: follow/unfollow, conditional rendering of user profiles, display followers/following.

Web Scraping, Classification, and Summarization with LLM | *Python, HuggingFace APIs*   January 2025
- Developed a Python script using Beautiful Soup to scrape IREX's website, gathering data on 90+ projects for my onboarding.
- Leveraged Mixtral-8x7B-Instruct-v0.1 with function calling to classify projects by digital components, summarizing key insights into a spreadsheet.

PDF QA Chatbot using RAG | *Python, HuggingFace APIs*   October 2024 - December 2024
- Designed and tested chatbots for querying PDF contents, evaluating RAG embedding methods, LLMs, and prompt-engineering strategies.
- Conducted an ablation study on three instruction-tuned LLMs (Microsoft Phi-3.5, Qwen2.5 72B, Mistral 7B), embedding models, and prompt engineering techniques.
- Classmate deployed a lightweight web UI for demo: (link).

Predictive Modeling on Human Trafficking Data | *Python*   October 2024 - December 2024
- Analyzed the CTDC Victim-Perpetrator dataset to uncover patterns in forced labor and sexual exploitation.
- Developed and evaluated machine learning models (Logistic Regression, Random Forest, XGBoost) for classifying exploitation types and predicting victim origins, achieving 80% accuracy.

Investigating the Performance of RNNs in Stock Market Analysis | *TensorFlow*   Apr 2024
- Utilized TensorFlow to train a Recurrent Neural Network (RNN) to predict the price of a set of stocks and ETFs.

Bookstore Inventory Management System Back-End | *MySQL, Python*   Dec 2023
- Built back-end of an inventory management system for bookstore employees using MySQL and Python.
- Implemented over 40 stored procedures supporting functions such as sales analytics and customer management.

Basic 'Paint' Application in Java | *Java, Swing UI, MVC Architecture*   May 2023
- Developed a basic 'paint' application in Java to draw shapes using text commands, employing MVC architecture.
- Conducted thorough unit testing using JUnit4.

Social Network Graphs for Strategic Decision Making | *Social Network Analysis*   2021 - 2022
- Built and analyzed social network graphs mapping the rural governance ecosystem in West Africa, informing strategic decisions for the US government and local stakeholders after the 2022 Burkina Faso coup.

Geospatial Analysis for Construction Monitoring | *QGIS*   2019
- Conducted geospatial analysis using QGIS to remotely monitor construction activities in Northern Nigeria, leading to a safer and more cost-effective monitoring strategy.
- Managed contract with Planet Labs to schedule satellite tasking and receive imagery.

Experience

Senior Technical Advisor for Digital Development   IREX
Washington, DC   *January 2025 - Present (Furloughed due to Executive Orders)*
- Hired to advise IREX leadership on scaling its digital project portfolio by developing growth strategies and leveraging its partnership with Development Gateway, an IREX venture specializing in government digital transformation and digital public infrastructure (DPI).
- **Transferable skills:** business strategy; ideation; building partnerships; cross-functional collaboration; gathering technical requirements; technical writing.

Independent Consultant – Data Migration, Quality Assurance Automation   Client: Exchange.Design / USAID
Remote   *July - September 2024*
- Developed a Python script to consolidate and clean data from 120 Excel files and migrate them to Airtable for a $200M USAID project.
- Wrote a fuzzy-matching Python script to deduplicate and consolidate 60,000+ rows of data to 10,000 unique rows.
- Drafted an Entity Relationship Diagram to model the new Airtable database schema for a non-technical audience.
- Researched and drafted a data reporting automation plan using the Airtable API, incorporating data quality tests, automated cleaning, and a user-friendly UI for client teams.

Digital Democracy Lead, Creative Development Lab   Creative Associates International
Washington, DC   *April 2019 - August 2022*
- Advised a global USAID contractor on technology strategy and implementation for 20+ active international projects and an annual proposal pipeline of $500M.
- Led selection, design, and deployment of technologies supporting civic participation, economic growth, open governance, anti-corruption, and data-driven decision-making for civil servants and civil society organizations.
- Developed technical requirements, identified software needs, and negotiated with subcontractors for projects and proposals operating in developing countries.
- Facilitated four external training events related to tech, digital security, and civil society. Participants included non-technical audiences such as young activists, journalists, and members of political parties.
- **Transferable skills:** product/project management; cross-functional collaboration; developer advocate; building partnerships; user research; ideation; gathering technical requirements technical writing.

Business Development Manager; Project Manager (Dual Role)   Souktel Digital Solutions
Washington, DC; Ramallah, Palestine   *April 2018 - March 2019*
- Managed end-to-end business development for a custom software company in the humanitarian aid sector, driving a $5M annual proposal pipeline and securing $1M in contracts.
- Served as a billable project manager for software builds on two USAID projects in the Philippines and Uganda.
- Developed software specifications and collaborated with developers to ensure product design and delivery following an Agile and Human-Centered Design model.
- **Transferable skills:** business development; cross-functional collaboration; building partnerships; product management; gathering technical requirements; developer advocate.