

VICTOR MIGUEL TERRÓN MACIAS

SOFTWARE ENGINEER

Master Software Engineer with 6+ years of experience in full-stack development, 2+ years in data analysis, and 1 year in project management. Proficient in Python, Django, and NLP-based AI applications, with a strong background in implementing standards like ISO/IEC 29110. Adept at leading cross-functional teams, automating workflows, and delivering scalable, user-centric solutions. I am committed to continuous learning and applying the proper technologies to drive impactful change in all the projects that I can.

WORK EXPERIENCE

Python Developer using DJANGO at International Conference on Software Process Improvement 2024 (cimps.org)

July 2024 – October 2024 [Zacatecas, Mexico in Remote] [Event management platform, custom software, B2C]

RESPONSIBILITIES

- Directed all phases of the event management system development, from requirements gathering to deployment.
- Designed and implemented robust user registration and attendance tracking functionalities.
- Developed and utilized data analysis models to monitor stock levels for event-related materials.
- Engineered an automated solution for generating personalized diplomas, reducing manual processing time and improving the accuracy of certification issuance for event participants.
- Implemented PayPal API for secure and streamlined payment processing, allowing users to pay for event registrations quickly and ensuring seamless financial transactions.
- Designed a multi-tier user access control system, defining roles and permissions for various types of users (e.g., public, students, authors).
- Developed tools for event schedule management for creating, adjusting, and optimizing event timelines efficiently.
- Managed the platform's deployment on cloud-based infrastructure (e.g., AWS), ensuring scalability and security for handling high registrations and event data volumes.
- Implemented automated testing to ensure reliability and robustness.
- Acted as the primary point of contact with stakeholders, providing regular updates on project progress and incorporating feedback to ensure alignment with event goals and user needs.

KEY ACCOMPLISHMENTS

- Delivered a robust platform that managed user registrations, event schedules, payment processing, and access control from concept to deployment, ensuring seamless user experience and meeting all stakeholder requirements. Duration: 4 months (July to October). Measurement: Achieved high user satisfaction ratings and event operations, as evidenced by positive feedback from organizers and participants during post-event surveys.
- Developed analytical models to monitor the stock status of souvenir kits and event materials, enabling accurate forecasting and timely restocking throughout the event preparation and execution phases. Duration: 1 month. Measurement: Reduced stockouts by 30% and optimized inventory levels, contributing to a more efficient distribution of resources and lower event-related costs.
- Created an automated system to generate personalized diplomas for event participants, ensuring accuracy and significantly reducing administrative workload. Duration: 1 month. Measurement: Issued over 500 diplomas with zero errors, streamlining the certification process and saving administrative staff significant time.
- Implemented a PayPal payment gateway, allowing for secure and efficient payment processing for event registration fees and product sales, enhancing user trust and convenience. Duration: 1 month. Measurement: Processed over 300 transactions with zero payment issues, increasing paid registrations by 25%.
- Deployed the solution on a cloud-based infrastructure, ensuring stability and security for high volumes of user data and event activities. Duration: 1 month. Measurement: The platform maintained 99.9% uptime during high-traffic periods, ensuring smooth access for all users throughout the event.
- Developed a secure user access system that differentiated roles and permissions, ensuring each user type (public, students, authors) had appropriate access to the system's functionalities. Duration: 1 month. Measurement: Reduced unauthorized access incidents by 40% and received positive feedback from users regarding the clarity and effectiveness of the role-based access control.

Python Developer using DJANGO at BECAANA Dulces (becaana.store)

December 2023– September 2024 [Zacatecas, Mexico] [Sales Point and ERP software development, custom software, B2B]

RESPONSIBILITIES

- Implement ISO/IEC 29110 standard, Kanban, and SCRUM methodology for developing the ERP and sales point project.
- Establish project objectives and requisites, including risk identification and mitigation.
- Managed change control processes and proper documentation of the project.
- Deployed application in AWS Cloud (EC2) and configured VPS (Firewall, elastic IP, SSL, DNS, among others).
- Migrated the application into a Docker instance for improved scalability.
- Developed automated unit testing to ensure software quality.
- Created project plans and timelines to guide project development at all stages (project initiation, execution, etc.).

KEY ACCOMPLISHMENTS

- Developed a dashboard for financial analysis, providing insights into the company's economic behavior and facilitating data-driven decision-making for ERP processes.
- Successfully transitioned from manual sales recording in Excel to an automated platform, significantly reducing manual register errors and enhancing data accuracy.
- Designed, developed, tested, and deployed a platform for automating sales registration and generating personalized receipts with unit discounts, taxes, and other information, leading to a better user experience. This was measured through user feedback, which highlighted the ease of use and completeness of information, underscoring the importance of user satisfaction in my work.
- Enhanced inventory management by implementing detailed vendor reporting features, improving efficiency and satisfaction: Enhance inventory management by providing detailed reports about its stock to vendors. Duration: 2 weeks. Measurement: Increased efficiency in vendor management and positive feedback from vendors regarding the usefulness of the reports.
- Established user roles with defined permissions, improving system security and user management. Enhance security and user management. Duration: 1 month. Measurement: Reduction in unauthorized access incidents and positive feedback from users regarding the clarity of permissions.
- Achieved high client satisfaction by delivering a robust, user-friendly platform that met all project requirements.
- Successfully deployed the solution on a server, ensuring accessibility and scalability with zero downtime.

Project Manager at CIMAT for BioSuite-T project (Copyright INDIAUTOR: 03-2023-112212403800-01)

January 2024 – April 2024 [Zacatecas, Mexico] [Bio-Informatics Software Development, B2B]

RESPONSIBILITIES

- Led the entire project lifecycle, from initial planning to delivery, ensuring alignment with client goals.
- Omics data analysis for pattern detection.
- Implemented data classifiers using AI algorithms such as Random Forest, K-N, GNN, etc.
- Designed a comprehensive software solution, leveraging design patterns to optimize architecture.
- Defined software requirements, coordinated with the development team, and validated specifications with the client.

- Implemented ISO/IEC 29110 standards, Kanban, and SCRUM methodologies to streamline project management.
- Developed detailed project plans, scopes, and schedules, including risk assessment and mitigation strategies.
- Assigned tasks, clarified roles and responsibilities, and maintained open communication with team members and clients.
- Oversaw automated unit testing to ensure high-quality code and project deliverables.
- Monitored timelines to ensure adherence to deadlines, adjusting schedules as needed to maintain project momentum.
- Managed application deployment on AWS Cloud (EC2), including VPS configuration (Firewall, Elastic IP, SSL), and transitioned the application to a Docker instance for enhanced scalability.

KEY ACCOMPLISHMENTS

- **Delivered Ahead of Schedule:** Achieved early project completion, delivering results faster than the planned deadline by optimizing team efficiency and using Kanban metrics like cycle time and throughput.
- **Positive Client Feedback:** Consistently received praise from clients for the functionality, usability, and performance of the delivered product, validated through monthly feedback sessions.
- **Scalable Deployment:** Deployed Bio-Suite-T both locally and on AWS EC2, ensuring high availability and scalability with zero downtime during deployment.
- **Secured Intellectual Property:** Successfully obtained copyright for the BioSuite-T project, recognizing the contributions of all team members and protecting the software's intellectual property.
- **Integrated Bioinformatics Tools:** Streamlined bioinformatics workflows by integrating multiple tools into a cohesive, code-free environment, enhancing usability and efficiency as reflected in user feedback.
- **Enhanced Data Analysis Capabilities:** Developed features that use advanced algorithms for analyzing omic data, enabling the detection of biological patterns and insights.
- **Implemented Quality Standards:** Successfully applied the ISO/IEC 29110 standard and SCRUMBAN methodology, improving project management processes and ensuring adherence to high-quality standards.
- **Enhanced Quality Assurance:** Implemented automated testing processes, significantly reducing defects and increasing the stability of the product throughout the project duration.

Python Developer for AI (NLP) data analysis using DJANGO at CIMAT for a tourism project in Government.

April 2023 – June 2023 [Zacatecas, Mexico] [DJANGO Developer, Artificial Intelligence Software: NLP, B2B]

RESPONSIBILITIES

- Led the project from concept to deployment, ensuring alignment with the goals of the tourism initiative.
- Developed a platform to analyze user-generated comments from Google Maps using its API.
- Implemented a Transformer-based AI model for Natural Language Processing (NLP) to classify sentiments in comments related to hotels, restaurants, and tourist places.
- Designed and built a user-friendly dashboard that visualizes insights from sentiment analysis, offering actionable data for stakeholders.
- Managed the application deployment on AWS Cloud (EC2), including the configuration of VPS (Firewall, Elastic IP, SSL).
- Migrated the platform into a Docker instance, enhancing scalability and maintainability.

KEY ACCOMPLISHMENTS

- **Implemented Advanced NLP Model:** Successfully integrated a Transformer AI model for sentiment analysis, enabling accurate classification of feelings expressed in comments about hotels, restaurants, and tourist sites. This streamlined collecting and analyzing user feedback, significantly improving efficiency. Duration: 2 months. Measurement: Evaluation of the platform's performance in language classification and feedback from users regarding the quality of the analysis classifying and statistics.
- **Developed No-Code GUI for AI Model:** Integrated a graphical user interface (GUI) that allowed users to interact with the AI model without programming skills, making the technology accessible to a broader audience. Duration: 2 months. Measurement: positive customer feedback.
- **Automate graph generation:** Enabled automatic generation of graphs and visual reports based on analysis results, simplifying deriving insights from data. Duration: 1 month. Measurement: Adoption of the improvements by stakeholders and positive feedback on the enhanced process for interpreting analysis outcomes.

Python Developer combined with DJANGO and naïve JS at CIMAT for VSEST 29110 project. (vsest29110.site)

November 2022 – March 2024 [Zacatecas, Mexico] [DJANGO Developer, Artificial Intelligence Software: NLP, B2B]

RESPONSIBILITIES

- Led the development of a platform to support the implementation of the ISO/IEC 29110 standard, ensuring compliance and efficiency in very small entities (VSE).
- Integrated the ChatGPT API, leveraging advanced prompt engineering techniques to refine responses and improve the quality of the language model output.
- Developed custom algorithms for extracting and analyzing textual content from documents, automating data analysis processes through classifiers and the LLM model.
- Designed functionalities that enabled users to audit and review documentation, providing real-time insights into process compliance with ISO/IEC 29110 standard.
- Built features for tracking project progress and aligning work products with the standard's guidelines, enhancing transparency and accountability.
- Refined the AI model using continuous tuning and prompt adjustments, maximizing the model's performance for complex language understanding tasks considering f-score, training loss, and accuracy.
- Implemented a multi-stack solution combining Python algorithms, Django framework, and Naïve JavaScript for a seamless user experience.

KEY ACCOMPLISHMENTS

- **Developed a Comprehensive Audit Platform:** Created a platform that allows users to audit documentation and manage alignment with the ISO/IEC 29110 standard, significantly streamlining the auditing process and enabling the identification of improvement areas. Duration: 17 months. Measurement: Positive user feedback regarding the platform's usability and its effectiveness in managing compliance.
- **Enhanced Data Analysis with LLM Integration:** Successfully integrated the OpenAI ChatGPT 3.5 Turbo-0125 model for advanced language analysis, refining the model for improved contextual understanding and efficiency in analyzing work products. Duration: 2 months. Measurement: User feedback highlighted improvements in the quality of language analysis and the model's ability to generate actionable insights.
- **Automated Textual Analysis Processes:** Automated the analysis of work products using LLM capabilities, providing insights that help optimize documentation and reduce manual review time. Duration: 17 months. Measurement: Reduced time spent on manual analysis, with positive feedback from users regarding the relevance of the AI-generated insights.
- **Simplified Standard Implementation:** Proposed and implemented process improvements to simplify the ISO/IEC 29110 standard's application, making it easier for users to understand and adhere to guidelines. Duration: 3 months. Measurement: High adoption rate of proposed changes and positive stakeholder feedback regarding the simplification of processes.
- **Enhanced Security and User Management:** Secured user access by implementing social login options and defining multiple user types with role-specific permissions, enhancing security and user management.
- **Utilized a Diverse Tech Stack:** Developed a robust platform integrating Python, Django, JavaScript, and Naïve HTML, demonstrating versatility in both backend and frontend development. Full project duration: 1 year, 5 months.

System Administrator at CIMAT for CIMPS 2022 and CIMPS 2023 projects.

May 2022 – April 2024 [Zacatecas, Mexico] [Server configuration, Network configuration]

RESPONSIBILITIES

- Server deployment and configuration: configure AWS EC2 instance.
- Network configuration: configure firewall rules, set up port configurations, and assign elastic IP to instance.
- Domain and DNS management: Register domains through domain service providers (Namecheap, freenom, ghandi) and configure DNS records to associate domain names with instance elastic IPs.
- Implement SSL certificate for secure communication over HTTPS.
- Private email configuration.
- Set up and manage FTP services and reverse proxy using NGINX.
- Application deployment: configure the OpenConf application and WordPress into a Docker instance.
- System maintenance and monitoring: server performance, availability, resource utilization, and troubleshoot server-related issues.

KEY ACCOMPLISHMENTS

- Successfully provision and configure an AWS EC2 instance within project timelines: Ensure timely setup and configuration of AWS infrastructure, meeting project deadlines. Duration: 3 weeks. Measurement: Compare actual setup time with project timelines and successfully deploy required services on the EC2 instance.
- Secure network configuration: implemented firewall rules and security group configurations, ensuring the protection of server resources. Enhance server security by implementing robust firewall rules and security group configurations, safeguarding against unauthorized access and potential threats. Duration: 1 day. Measurement: Absence of security breaches or incidents and positive feedback regarding the security measures implemented.
- Effective incidence management and problem resolution if the system degrades, interrupts applications execution or goes down.
- Effective Domain and DNS management: register and configure domain name facilitating resource access through its respective URLs. Streamline resource access and enhance user experience by properly managing domain names and DNS configurations. Duration: 1 day. Measurement: Successful association of domain names with respective resources and feedback from users regarding the accessibility of resources through URLs.
- Deployment applications on EC2 efficiently, ensuring proper functionality and performance. Ensure seamless deployment and optimal performance of applications on the EC2 instance, meeting project requirements. Duration: 2 days. Measurement: Successful deployment of applications without downtime and positive feedback regarding functionality and performance.
- Conducted regular maintenance tasks and updates if required. Ensure server reliability and stability by performing regular maintenance tasks and updates as needed. Duration: Ongoing. Measurement: Absence of performance degradation or issues related to outdated software and positive feedback regarding server reliability.
- Proactive monitoring and issue resolution: monitored server performance and solved reverse proxy conflicts with other applications deployment ports: Identify and resolve server issues proactively, ensuring uninterrupted service availability. Duration: Ongoing. Measurement: Timely detection and resolution of server performance issues and conflicts and positive feedback regarding service availability.

PROJECTS

El impacto del COVID 19 sobre la economía mexicana (Shiny Application)

December 2020 – February 2021 [CDMX, Mexico in Remote] [Data analysis for time series applied to predicting trends, custom software, B2C]

RESPONSIBILITIES

- Team Collaboration: Worked alongside two colleagues in developing the analysis, distributing tasks and responsibilities to address the key questions regarding the impact of COVID-19 on employment in Mexico.
- Development of ARIMA Models: Implemented various time series models (ARIMA) to forecast the impact on employment, selecting appropriate orders for each model based on economic sector and income level.
- Disaggregated Analysis: Conducted a detailed analysis by economic sectors (primary, secondary, and tertiary) and income levels (below one minimum wage, between one and two minimum wages, etc.) to determine:
 - General Impact on Employment: Evaluated the pandemic's overall effect on Mexico's labor market.
 - Most and Least Affected Sectors: Identified which economic sector was most and least affected.
 - Affected Income Levels: Determined which income level was most and least impacted by the crisis.
 - Impact on Businesses by Size: Analyzed the impact of the pandemic on businesses classified by size (micro-businesses, small, medium, and large) to understand how each category was affected.
 - Results Visualization: Generated graphs that illustrate forecasts and trends in employment for each sector and income level, facilitating understanding of the data and results.
 - Shiny Application Development: Designed and developed a Shiny application to present the analysis results interactively, allowing users to explore the forecasts.
 - Documentation and Presentation: Compiled a detailed report that includes methodology, results, and conclusions regarding the impact of the pandemic on employment, presenting the findings to our peers and course facilitators.

SKILLS

Technical Skills:

- Software Development Life Cycle (SDLC).
- DevOps Foundations.
- Docker.

Professional Competencies:

- Strategic Planning.
- Project Management.
- Risk Management.

Technical Skills:

- Software Development Life Cycle (SDLC).
- DevOps Foundations.
- Docker.

Interpersonal Skills:

- Effective Communication.
- Conflict Resolution.

Personal Attributes:

- Adaptability.

- Python.
- R.
- Data Analysis.

- Change Management.
- Requirements Establishment.
- Problem-solving.

- Python.
- R.
- Data Analysis.

- Decision Making.
- Multidisciplinary Team Collaboration.

- Resilience.

- Kanban System Design.
- SCRUM Foundations.

- Quality Assurance.
- Testing.

- Kanban System Design.

- Coordination with Multiple Teams.

- Commitment.

EDUCATION

Master Software Engineer at Research Center in Mathematics

August 5, 2022 – July 2, 2024. [Zacatecas, Mexico]

Mechatronics Engineer at Technological University of Tlaxcala

April 5, 2018 – May 5, 2022. [Tlaxcala, Mexico]

CERTIFICATIONS [C] AND COURSES [S]

Project Manager at Google Specialization COURSERA [C]

November 2023.

Note: This specialization includes other courses like (Project Initiation, Project Management Foundations, Project Planning, Project Execution, Final Project: Applying Project Management with a real project, and Project Manager with Agile Methodologies).

DevOps Essentials at KZI Kaizenia [C]

May 2023. [Zacatecas, Mexico]

KanBan System Design at KanBan University [C]

March 2022. [Zacatecas, Mexico]

SCRUM Foundations Professional Certificate at CertiProf [C]

August 2022. [Zacatecas, Mexico]

Oracle Certified Foundations Associate at ORACLE [C]

July 2023. [Tlaxcala, Mexico]

Lean Six Sigma Professional Certificate at CertiProf [C]

March 2021. [Zacatecas, Mexico]

Macro training in Artificial Intelligence at UNAM and Red de Macro Universidades de América Latina y el Caribe [S]

May 2021. [Tlaxcala, Mexico]

Data Analysis with Python and R at BEDU (SANTANDER Scholarship) [S]

May 2021. [Tlaxcala, Mexico]

Complete Linux Training Course at UDEMY [S]

June 2022. [Tlaxcala, Mexico]

IoT Masterclass at UDEMY [S]

May 2021. [Tlaxcala, Mexico]

Web Applications Developer at Certificate para el Empleo[S]

May 2021. [Tlaxcala, Mexico]

Key skills and competencies for the work of the world at FESE [S]

January 2021. [Tlaxcala, Mexico]

Network Management at the University of the Valley of Mexico [S]

January 2022. [Tlaxcala, Mexico]

TECHNOLOGIES & FRAMEWORKS

- Programming Languages:
 - Python.
 - C#.
 - C++.
 - Java.
 - JavaScript.
 - Bash.
 - VHD.
- Web development:
 - DJANGO.
 - React.
 - HTML & CSS.
 - JavaScript.
 - Tailwind.
- Databases:
 - SQL (MariaDB, PostgreSQL, MySQL, Oracle).
 - No-SQL (MongoDB).

LANGUAGES

English (C1 level) and Spanish (Native).