Ernesto Leal Isla Zamora

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EDUCATION

Technical University of Applied Sciences Würzburg-Schweinfurt   **Schweinfurt, Germany**
Degree: **Mechatronics Engineer** *Specialization:* **Applied Machine Learning and AI**   *Expected Graduation: December 2025*
o   **Related Coursework:** Embedded Systems, Control Systems & Modeling**,** Data Structures & Algorithms, Automation.

WORK EXPERIENCE

Finlet (Tech Start-Up)   Schweinfurt, Germany
Founder & CEO   *Current*
- **Founded a biometric payment startup**, creating a fingerprint-based authentication system for secure financial transactions
- **Spearheading a scalable backend architecture** using Django, AWS Cognito, Lambda, and DynamoDB **supporting 1000 users**.
- **Designed and integrated the fingerprint hardware** prototype with R307 sensor for secure user authentication via the app.
- **Directed the development & deployment of a user authentication system** with AWS Cognito, enabling secure registration.
- **Led a team of 4 to build a scalable cloud-based infrastructure** that can grow seamlessly with growing user demands.

Center Additive Metal Printing (IDEE)   Schweinfurt, Germany
Thermographic Data Engineer   *Current*
- **Advancing high-precision laser control** in C# to enhance the 3D printing accuracy and quality.
- Analyze thermal data in Python, targeting a **15 % improvement** in heat dissipation through algorithmic implementation.

Schneider Electric   Marktheidenfeld, Germany
Software & Artificial Intelligence Engineer (Reclassified post-hiring)   *2023*
- **Developed tools** (and libraries) for automated processes while **integrating digital twin, AI and machine learning** concepts.

CUPRUM   Monterrey, Mexico
Mechatronics Engineering Intern   *2020-2021*
- **Increased manufacturing efficiency by 11%** through Python-based data analysis applications for inventory management.
- **Boosted decision-making speed by 23%** with SQL/Python analysis of production data.
- **Reduced troubleshooting time by 17%** by debugging and testing communication systems (**PLCs, microcontrollers**).

SKILLS

Languages	Python, C++, C, C#, JavaScript, Java, Assembly, SQL, HTML, CSS, Node.js, React, Django, Tailwind, Solidity
Software Development	MATLAB, Machine Learning, Git, CI/CD, Agile, Object-Oriented/Procedural Programming, Low-Level Optimization, AWS, Kubernetes, OpenCL, LinuxOS, Data Structures and Algorithms, Pytorch, Tensorflow, CUDA
Hardware	Control Systems Engineering, Analog & Digital Signal Processing, Integrated Circuit Design, Microcontrollers, Embedded Hardware Systems Design, Computer Architecture, Printed Circuit Board Design
Tools	Microsoft Office & Excel (Advanced), PyCharm, Visual Studio Code, Eclipse, GitHub, Google Colab, Unreal Engine, PowerBi, DavinciResolve, PLC, RaspberryPi/Arduino, Shell, Terminal, CAD

PROJECTS

AES128 (Advanced Encryption Standard) | C++, Makefile, CUDA   *2024*
- **Developed a robust, high-performance AES-128 encryption algorithm in C++ from scratch**, aligning with U.S. standards.
- **Optimized memory use and faster processing by 10X** (from 2s to 0.05s) by implementing CUDA for parallel processing.

Cancer Analysis (Malignancy Assessment) | Python, Pandas, Numpy, TensorFlow   *2024*
- **Achieved 94% accuracy** in predicting cancer malignancy by developing a neural network machine learning model in Python.
- **Surpassed traditional doctor diagnostic accuracy rates** from 87% to 94% and **time reduction from 2 weeks to 30 seconds.**

Full-Stack Website with Integrated Python Compiler | Python, Django, JavaScript, React, Tailwind   *2024*
- **Built a full-stack portfolio site from scratch** using Django and React, combining responsive design.
- **Integrating a functional Python code compiler**; the seamless user experience allows the user to code with no downloads..

Advanced Simulation of Chaos Theory for Enhanced Energy Harvesting Efficiency | MatLab, Simulink   *2020*
- **Achieved around 10,000% increase in energy harvesting efficiency** when engineering a MATLAB simulation of chaotic systems.

LANGUAGES

Spanish (Native Proficiency), English (Native Proficiency), German (Limited Working Proficiency), Portuguese (Basic)