Marc de Lecea

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Experience

Automation Engineer, Generate Biomedicines — June 2022 – Present

- Created LLM-powered platemap transformer for users to quickly create complex plate layouts.
- Developed a universal Lynx liquid handler worklist parser that optimizes multi-dispensing, splits volumes to fit tips, and automatically arranges labware to enhance operational efficiency.
- Designed and implemented an API to receive and parse real-time usage data from lab instruments, ensuring prompt alerts through Slack messages if an instrument requires attention.
    - Hosted and integrated Streamlit data dashboard using live lab instrument data from the API, enhancing data visualization and analysis capabilities.
- Successfully onboarded a fully integrated HighRes system, increasing bandwidth by 600%.
- Created and maintained a modular Python API that transforms platemaps and generates worklists for liquid handlers, streamlining workflows.
    - Collaborated with the Informatics team to host the API using AWS Lambda and implemented an Aurelia frontend for the tools.
- Designed intelligent Lunatic transfer and read methods, enabling fully automatic normalization from concentration readings by updating database and calling custom API.
- Improved liquid handler integration driver reliability and reduced command latency by 1000%.
- Elevated barcode coverage from 0% to 70% of lab processes through new tools and trainings.
- Effectively mentored and guided junior engineers, fostering a collaborative and supportive team environment.

Manufacturing Automation Engineer, Hologic Inc. — June 2021 – March 2022

- Automated serialization process by dynamically generating laser engraving toolpath with Python.
- Designed hardware fixture in Solidworks to assist operators and improve ergonomics.
- Documented usage procedure, maintenance manual, and validation tests for manufacturing.
- Prototyped and built batch PCB cleaning tool to speed up flux cleaning by 1500%.
- Modified Android testing software to speed up probe verification and increase accuracy.

Research Assistant, University of Delaware — June 2020 – November 2021

- Implemented a pathfinding algorithm and plane mapping to simulate microrobot swarms.
- Developed a MATLAB GUI to visualize microrobots and their path planning decisions.
- Programmed a control schema of microrobots using a magnetic field array for precise navigation.
- Implemented a vision tracking system to monitor multiple microrobots simultaneously.
- Crafted an automatic control and calibration system, enabling accurate direction of robots.

Education

Master of Science in Robotics — May 2022

University of Delaware, Newark, DE – Cum Laude
Concentrations in AI and Controls

Bachelor of Science in Mechanical Engineering — May 2021

University of Delaware, Newark, DE – Dean's List
Minor in Computer Science

Skills and Abilities

- Experience with Dynamic Devices Lynx, Hamilton Venus, and Tecan Fluent liquid handlers
- Extensive machining knowledge and Solidworks experience
- Proficiency in Python, C#, Javascript, Java, MATLAB, C, C++, Bash
- Bilingual in Spanish