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Adrian De La Torre

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A product-focused software engineer skilled in solving complex problems and delivering reliable solutions under tight deadlines. Contributed to the software suite launch for Onso, PacBio's first short-read sequencer, and developed a full-stack tool for the Vega benchtop long-read sequencer, supporting manufacturing and field teams with real-time hardware control and system monitoring.

Skills

- Languages: C#, Python, C++, C, Typescript
- Technologies: .NET, WPF, React, Electron, Appium, NUnit, Vitest, Ninject, Git, Atlassian Suite
- Platforms: Windows, Linux (SSH, headless access, serial communication, telnet, package managers)
- Other: Spanish Fluency

Experience

Software Engineer II **PacBio** **Feb 2024–Present**
Software Engineer I **PacBio** **Jul 2022–Feb 2024**

Developed a full-stack platform for the Vega DNA sequencer, integrating frontend and backend components to enable real-time hardware control, system monitoring, and streamlined deployment across manufacturing and field operations.

- **Developed a full-stack diagnostic and control tool** for the Vega DNA sequencer, including a **C# REST API middleware** that interfaced with instrument control software (ICS) via an RPC layer to run hardware commands, retrieve telemetry/logs, and perform calibrations (e.g., laser alignment, robotic movement, pipette control, NFC operations)
- **Played a key role in developing a cross-platform desktop application** using **React, TypeScript, and Electron** that enabled:
  - **Live camera feed monitoring** from the instrument
  - **Running custom calibration routines** via dynamic JSON payloads
  - **Modifying ICS settings** for real-time device configuration
  - **Deploying and managing middleware versions on linux-based systems**, with visual feedback for all system components (frontend, middleware, backend)
- Contributed across the stack: **frontend development, backend API design, system integration, and testing**, ensuring seamless and reliable interaction between UI and hardware
- **Deployed in both manufacturing and field environments**, empowering service teams to troubleshoot, calibrate, and update sequencer systems with improved efficiency and visibility

Quickly demonstrated proficiency as a developer, emphasizing strategic thinking and effective communication with external teams. Played a key role in various projects, notably contributing to the achievement of a successful market launch.

- **Led the software integration effort** of a major firmware (C#, C++, CAN bus) replacement of **high-speed stepping motion control** that resulted in **reduced scan times** and **increased stability**.
- **Developed Python scripts with 'pythonnet'** to integrate external APIs, enabling seamless **operation and monitoring of fluidics** in sequencing instruments
- **Enhanced the sample sheet pipeline** from customer input parsing and validation (WPF, MVVM, C#) to a more efficient **primary analysis interface**, improving data processing speed and accuracy
- **Redesigned the gantry system**, externalizing the coordinate mapping with a flexible, file-based approach, enabling easier future updates and configuration changes
- **Upgraded communication protocols** for motion controllers (Festo, Aerotech) using **TCP/IP and C# DLLs**, ensuring compatibility with new versions and improving real-time performance
- **Developed a stable conference demo version** of sequencing software that ran **for over a year without requiring patches**, allowing the team to focus more on feature development and bug fixes

- **Verified major customer releases** (Xray for Jira, Excel), taking responsibility for **triaging, bug fixing, and testing**, ensuring high-quality software deployments

Software Test Engineer I **PacBio** **Mar 2022–Jul 2022**

Joined PacBio to uphold software stability and enhance user satisfaction through meticulous manual and automated testing within a dynamic, high-pressure environment.

- **Developed multiple end-to-end (E2E) tests** using **Python and Appium**, ensuring comprehensive coverage of user workflow interactions with desktop sequencing software and improving software reliability
- **Collaborated with development teams** to **isolate and resolve bugs**, analyzing software logs, verifying reproducibility, and providing **detailed reproduction steps** in Jira, leading to faster issue resolution
- **Collected and documented feedback** from internal lab users via **Confluence**, contributing to actionable insights for improving the software application suite and enhancing user experience

Technology Intern **Brandes Investment Partners** **Jun 2018–Sep 2018**

- **Visualized employee time allocation data** from MySQL using **SQL Server Reporting Services (SSRS)**, creating custom reports and queries that provided valuable insights into **company resource management** and helped optimize task allocation

Projects

Predictive Analytics IoT System **Apr 2025–Present**

- Developing an IoT-based predictive analytics system using **ESP32** for environmental monitoring
- Integrating sensors (BME280, MQ-135, BH1750, PIR) for real-time data collection on air quality, temperature, humidity, and motion
- Implementing machine learning models and analytics to predict environmental changes, aiming to improve decision-making and automation in smart systems

Education

- **B.Sc. Computer Engineering,** University of California, Riverside. **2017-2021**