Intelligent Monitoring of Rocket Test Systems

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Introduction

Stephanie Rocha is an undergraduate student pursuing a degree in Mechanical Engineering.

Esteban Duran is pursuing a degree in Computer Science.

Our mentor is Fernando Figueroa.

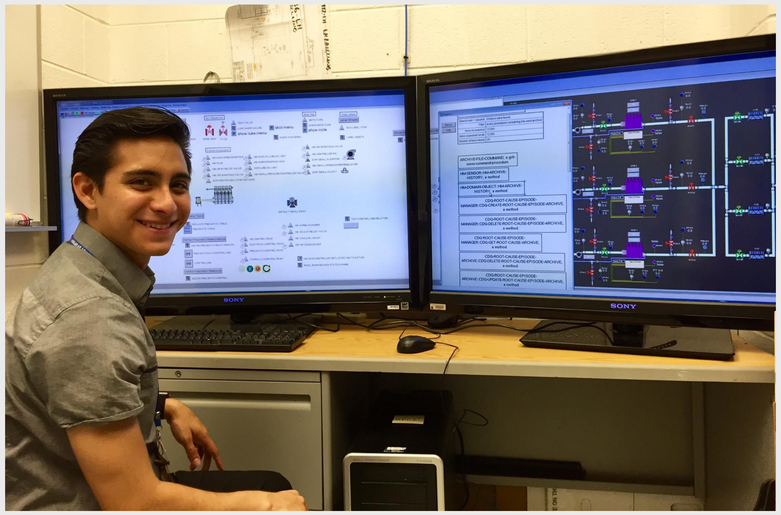
Our project involved developing Intelligent Health Monitoring at the High Pressure Gas Facility (HPGF) utilizing the software Gensym G2.

Objectives

Familiarize ourselves with the G2 software and technology in order to assist with the incorporation of the intelligent monitoring capability running at the HPGF.

Develop, integrate, and troubleshoot the software at the HPGF.

There would be an Advanced Exploration Systems (AES) review towards April that everyone had to prepare for. It was crucial to have a working and presentable demo, which meant having our software integrated and presenting helpful data to the end user. To do this, we had to ensure that the software connected successfully to the OPC Bridge and reflected the PLC data for the presentation.



Outcomes

We now have a greater understanding of:

- Gensym G2
- OPC Bridge
- Programmable Logic Controllers (PLC)
- Ladder logic
- Cryogenics
- HPGF schematics
- Rocketry
- Software development with a team
- Intelligent Systems
- Communicating and compromising with others

Summary

By implementing Intelligent Health Monitoring at the HPGF we can detect various anomalies and provide diagnosis to operators.

This system is of great benefit to SSC since it will reduce costs, enhance quality of data, and optimize safety.

As interns we were exposed to the local culture as well as volunteered at Infinity Science Center.

Stephanie also had the chance to implement her machining skills by cutting fuel cells for pocket rockets.

We were volunteers/judges at NCAS 2016

We visited Kennedy Space Center for a week to see how the same software is being implemented

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