



NASA-KSC/EX-E High Education Internship Project & Abstract Form

Please provide this information requested to: rose.m.austin@nasa.gov
Telephone: 321.867.6481

Full name (First MI Last):	J. Nicolas Schradung
Academic Institution:	Rochester Institute of Technology
City, State Zip Code:	Rochester, NY 14623
Program Hired Under (Funding Source):	KSC FO
Name of Branch or Division:	NEE70, ACLO
Desk Location (Bldg Name, Cube #):	EDL, 2133G
Work Phone (If Applicable):	7-2792
Cellular Phone:	
Degree of Study: (i.e. MBA, BS in Electrical Engineering, etc) Major & Minors	BS/MS Computer Engineering
Expected Graduation (Month/ Year):	05/2015
Project Title:	Autonomous Cryogenic Load Operations: KSC Autonomous Test Engineer
Project / Abstract Summary: (Approximately 300 words)	
<p>One complete paragraph in itself (not an introduction). It should indicate subjects while also stating objectives of the project. Newly observed facts and conclusions of project discussed must be stated in summary form. Readers should be able to understand your project and what you completed in your abstract.</p> <p>The KSC Autonomous Test Engineer (KATE) program has a long history at KSC. Now a part of the Autonomous Cryogenic Load Operations (ACLO) mission, this software system has been sporadically developed over the past 20+ years. Originally designed to provide health and status monitoring for a simple water-based fluid system, it was proven to be a capable autonomous test engineer for determining sources of failure in the system. As part of a new goal to provide this same anomaly-detection capability for a complicated cryogenic fluid system, software engineers, physicists, interns and KATE experts are working to upgrade the software capabilities and graphical user interface. Much progress was made during this effort to improve KATE. A display of the entire cryogenic system's graph, with nodes for components and edges for their connections, was added to the KATE software. A searching functionality was added to the new graph display, so that users could easily center their screen on specific components. The GUI was also modified so that it displayed information relevant to the new project goals. In addition, work began on adding new pneumatic and electronic subsystems into the KATE knowledgebase, so that it could provide health and status monitoring for those systems. Finally, many fixes for bugs, memory leaks, and memory errors were implemented and the system was moved into a state in which it could be presented to stakeholders. Overall, the KATE system was improved and necessary additional features were added so that a presentation of the program and its functionality in the next few months would be a success.</p>	
If you are writing a paper for school or specific internship program, provide the following:	
Paper Title:	
Mentor Name:	
Mailcode:	