CS490 – Autonomous Vehicle Design

Engineering Notes No. 4.2

INFORMATION

NAME: Serena Conticello

DATE: 11/05/24 - 11/11/24

Sprint: 4

JIRA BACKLOG

Responsible for:

- Email Kunal about Scenario Creation
- Complete Sections 6 and 7 of SRS document

Contributed to:

- Determine Goals with Acclivis
- Determine Meeting times and frequency with Acclivis
- Install Polyverif on Serena's Laptop

RESOURCES & DOCUMENTS CONTRIBUTED TO

Table 1 - Contributions

Date	Resource/Document	Location	Contribution Description
sprint	Personal Engineering Notes	One Drive & GitHub	Completed engineering notes

COMPONENTS TESTED

Table 2 - Testing

Date Tested	Component	Result	Comments
n/a	n/a	n/a	n/a

PROBLEMS SOLVED

Table 3 - Solutions

Date	Problem	Solution & Notes
n/a	Simulation Software Switch	NOT solved, removing till further notice.
11/05/24	Set team members in roles	Positions naturally filled, nothing too concreate as PolyVerif is not working at the moment. Will reassign roles when we manage to get the program working.
11/07/24	Establish Communication with PolyVerif contacts	Been in touch with Kunal and Bidur regarding PolyVerif issues.
11/07/24	Presentations	Completed presentation.

PROBLEMS TO ADDRESS NEXT

Table 4 – Future Problems

Problem	Description
Dual Boot Serena's Computer	Put ubuntu on laptop. Not going to be done until PolyVerif issues are figured out so my computer does not get bricked.
Basic Simulation Working	Have a basic simulation running on the PolyVerif computer in the MicaPlex.
Uploading 3D Map of Campus	Reverse engineer software and reach out to PolyVerif contacts.
Get Recording	Record the simulation for demonstration and record keeping.
PolyVerif Not Working	No idea.
Complete SDD Document	Work on it.

MEETING NARRATIVE NOTES:

Table 5 – Meeting 1

11/05/24	**Meeting Type:** Class
Met with Product Owner(s): Y – Dr. Akbas, Clay	
Problems Brought Up:	
Problem	**Proposed Solution**
Complete SDD Document	Work on it.
Other Items Updated on:	
• Engineering notes need to be in PDF format • SDD moved to 11/21/24	
Additional Notes:	
n/a	

Table 6 – Meeting 2

11/07/24	**Meeting Type:** Class
Met with Product Owner(s): Y – Dr. Akbas Clay	
Problems Brought Up:	
Problem	**Proposed Solution**
Presentations	Complete presentation.
Other Items Updated on:	
n/a	
Additional Notes:	
n/a	

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NOTES:

More troubleshooting being done. Thankfully our PolyVerif contacts have been trying their hardest to help out, along with Jackson Baker and Quentin.

11/07/24

Communicated with Kunal regarding our issues, sent the following message:

Hi Kunal,

Thank you so much for the instructions, we are messaging you because we have encountered some more issues with PolyVerif. While we were able to install everything easier, we are having issues with the software not running the scenario. We were able to get the program running, but when we hit "Run Scenario" we were prompted with a *command not found* error. Through further analysis we believe these are the following problems we are encountering:

- The instructions seem to be missing an argument that would enter a shell into the Docker image
- The Docker volume does not contain *gnome-terminal* which is needed for the script, we cannot find it installed on the image
- When we attempted to install gnome-terminal, it required a commit to the Docker image to not remove the package
- There seems to be a missing argument in the host display to run the program

We are still seeing if we can fix this issue ourselves, but any guidance you might have into these current issues we are facing would be greatly appreciated. Thank you again for your continued help!

Was given the following response:

Dear Serena,
As per my experience, installation should be done carefully. I installed the PolyVerif module on Ubuntu 20.04, as I encountered issues when attempting the installation on Ubuntu 22.04. I tested the setup on my system, which includes an NVIDIA GTX 1050Ti with 4GB of VRAM, despite the recommended GPU being a GTX 1080Ti with 8GB.
Before proceeding with the PolyVerif setup, I followed the instructions in `docker_installation.txt`. The installation went smoothly except at line 41, where the command `docker run hello-world` failed with the error shown below (Even if this I encountered this error, the PolyVerif installation seemed complete, but afterwards I could not run scenarios):

```
docker: Cannot connect to the Docker daemon at unix:///home/
bidur/.docker/desktop/docker.sock. Is the docker daemon running?
See 'docker run --help'.
```

To address this, I modified the default Docker host setting as follows:

```
export DOCKER_HOST=unix:///var/run/docker.sock
```

This adjustment allowed me to continue with the PolyVerif installation.
After completing the installation, I followed steps 1, 2, and 3 as outlined in the Document folder. The video tutorials provided in the documentation were particularly helpful. While I was able to proceed with most tasks, I encountered a few issues: at times, my system froze briefly, and the execution times were longer than demonstrated in the videos.
The sequence of commands that I executed for solving the error are:

```
###################################
$ sudo service docker start
$ sudo docker run hello-world
$ sudo groupadd docker
$ sudo usermod -aG docker $USER
$ newgrp docker
```

All the above commands executed, then the following command could not execute

```
$ docker run hello-world
```

The above command couldnot execute but it prompted:

```
docker: Cannot connect to the Docker daemon at unix:///home/bidur/.docker/desktop/docker.sock. Is the docker daemon running?.
See 'docker run --help'.
```

Solution (temporary solution for the current console session, you may need to make it permanent or re-run the export command below for each new session) :

```
export DOCKER_HOST=unix:///var/run/docker.sock
###################################
```

I hope these insights help.

11/08/24

Was informed there might be an issue with our Gnome Terminal, was given the following steps to resolve.

Thank you for reaching out. Based on the issues you've encountered, Please follow these troubleshooting steps to help resolve them.

PolyVerif relies on the host's GNOME Terminal to run scenarios. Please Verify if GNOME Terminal is installed on your host system by running.

$ gnome-terminal --version

If it's not installed or needs to be updated, please install or update It uses the following commands.

$ sudo apt update
$ sudo apt install -y gnome-terminal

To rule out any underlying Docker configuration issues, uninstall Docker and then reinstall it on your host system by following the **Docker_Installation.html** Document**.**

Once Docker has been reinstalled, please proceed with installing PolyVerif again.
If you continue to encounter issues, please share the following logs to help us better diagnose the problem:

- **NVIDIA GPU Information:** Run nvidia-smi and share the output.
- **GNOME Terminal Version:** Confirm the GNOME Terminal version by running gnome-terminal --version.
- **PolyVerif Scenario Error Logs:** Provide any error messages or logs you see when trying to run the scenarios within PolyVerif.

These logs will be crucial for further investigation and for providing more accurate support. Please feel free to reach out with any questions or if you need further assistance.