

BURGS Weekly Presentation

Broadening Undergraduate Research Groups

11/7/2025

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GazeXR Progress - Manifest Evaluations

Completed

01

Got login setup on the pc

02

Created GitHub for manifest evaluations

03

Got access to the first of the android manifests

Upcoming

04

Continue to evaluate the manifests

05

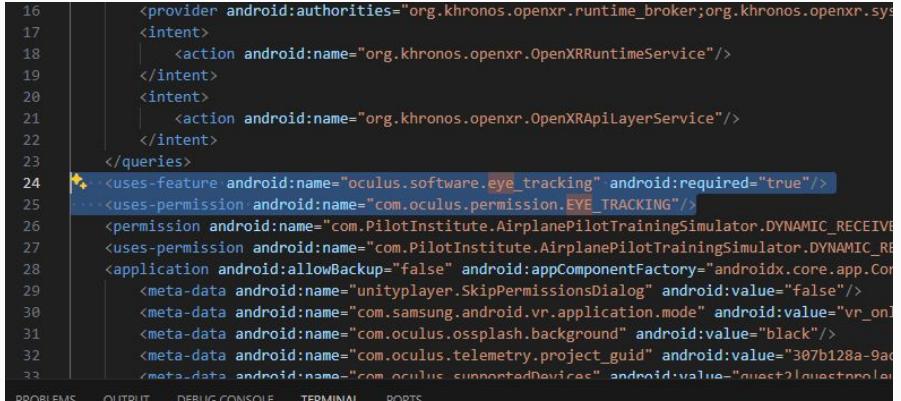
Compile data into spreadsheet

06

Begin brainstorming for VTURCs

GazeXR Progress - Manifest Evaluations

- Incorrect initial configuration of the .gitignore
 - Didn't ignore the large .APK file, needed to reset the commits made
- Created a [quick reference guide](#) on how to access the manifests
- Created a [spreadsheet](#) to compile manifest data
 - Goal: the data shows all apps that have the eye tracking declaration in the manifest have the eye tracking tag on the meta store, regardless of the presence of consent prompts in app



The screenshot shows an AndroidManifest.xml file with several declarations. Lines 24 and 25 are highlighted in blue, indicating they are being reviewed or are key to the analysis. Line 24 defines a feature named "oculus.software.eye_tracking" with a required value of "true". Line 25 defines a permission named "com.oculus.permission.EYE_TRACKING". Other visible declarations include permissions for dynamic receive and write, and application metadata for Unity player settings and VR mode.

```
16     <provider android:authorities="org.khronos.openxr.runtime_broker;org.khronos.openxr.sys
17         <intent>
18             <action android:name="org.khronos.openxr.OpenXRRuntimeService"/>
19         </intent>
20         <intent>
21             <action android:name="org.khronos.openxr.OpenXRApiLayerService"/>
22         </intent>
23     </queries>
24     <uses-feature android:name="oculus.software.eye_tracking" android:required="true"/>
25     <uses-permission android:name="com.oculus.permission.EYE_TRACKING"/>
26     <permission android:name="com.PilotInstitute.AirplanePilotTrainingSimulator.DYNAMIC_RECEIVE
27     <uses-permission android:name="com.PilotInstitute.AirplanePilotTrainingSimulator.DYNAMIC_RE
28     <application android:allowBackup="false" android:AppComponentFactory="androidx.core.app.Cor
29         <meta-data android:name="unityplayer.SkipPermissionsDialog" android:value="false"/>
30         <meta-data android:name="com.samsung.android.vr.application.mode" android:value="vr_on"/>
31         <meta-data android:name="com.oculus.osplash.background" android:value="black"/>
32         <meta-data android:name="com.oculus.telemetry.project_guid" android:value="307b128a-9a
33         <meta-data android:name="com.oculus.supportedDevices" android:value="quest2|questcontroller
34     </application>
35 
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\realDesktop\manifest-evaluations> mkdir app-manifests
```

```
Directory: C:\realDesktop\manifest-evaluations
```

| Mode | LastWriteTime | Length | Name |
|-------|--------------------|--------|---------------|
| d---- | 11/3/2025 12:20 PM | | app-manifests |

```
PS C:\realDesktop\manifest-evaluations> [REDACTED]
```

| Meta Store Link | Eye Tracking Declaration Present in Manifest | Eye Tracking Tag Present on Meta Store | Eye Tracking Consent Prompt Present In App |
|--------------------------------|--|--|--|
| is://www.meta.com/experiences/ | Present | Present | Not Present |

GazeXR Issues - Foveated Rendering

- Dynamic Foveated Rendering requires the eye tracking declaration in the android manifest
- Pauls attack uses DFR so the eye tracking tag should always appear on the meta store for the app
 - Testing this theory using the manifest evaluations

Enable Dynamic Foveated Rendering

Optionally, you can enable Dynamic Foveated Rendering (automatically switching foveated rendering level based on the current GPU load) by:

```
OVRManager.useDynamicFoveatedRendering = true;
```

Permission

The very first time a user opens an app with ETFR, the system will display a permission prompt requesting the user to accept the Eye Tracking permission. The Meta XR Core SDK will handle the underlying eye tracking permission (Android Manifest changes, permission request dialog, etc.). So you don't need to add specific code in your application to handle permission requests.

GazeXR: LLM Interpretations

Time Crunch...

01

Added Extra Prompt

- Asks to extract privacy policy without adding anything new
- Way to see basis
- Sometimes aborts because of copyright

02

ROUGE python code

- Researched scoring
- Wrote pseudo code
 - Reference is privacy policy
 - LLM response is what's scored
- Will finish over weekend

03

Sensor evaluation python code

- Accuracy based on...
 - Number of sensors mentioned matching number of sensors there is
 - Matching sensors (microphone and microphone)
- Want to start over weekend to research and code

GazeXR: LLM Interpretations code / outputs

```
"Go to the link and extract the privacy policy without summarizing, without adding anything, and without " +
" paraphrasing."
```

```
# initialize scorer, specifies the scores I want to use
scorer = rouge_scorer.RougeScorer(['rouge1', 'rouge2', 'rougeL'], use_stemmer=True)

# loop through each policy to examine and score
for file in os.listdir("privacy_policies"):
    # get the policy
    file_path = os.path.join("privacy_policies", file)
    #policy_name =
    with open(file_path, "r", encoding="utf-8") as f:
        reference = f.read()

    # get the reference summary (the LLM summary from the prompting)      You, 1 second ago
```

```
P> & C:/Users/cspen/AppData/Local/Microsoft/WindowsApps/python3.1
eering/gemini_prompts.py"
What prompt index (e.g. 0, 1, or 2) do you want to extract?
(index 3 is no summarization and does policy extraction) : 3
appasset.txt
policies.txt
gorillatagvr.txt
auravision.txt
termsfeed.txt
immerselearn.txt
rendever.txt
immersed.txt
volucap.txt
hello.txt
```

```
PS C:\Research\MAOP\Research Code\maop_summer_research\GenAI Prompt Engineering & C:/Users/cspen/AppData/Local/Microsoft/WindowsApps/python3.
12.exe "c:/Research\MAOP\Research Code\maop_summer_research\GenAI Prompt Engineering\gemini_prompts.py"
What prompt index (e.g. 0, 1, or 2) do you want to extract?
(index 3 is no summarization and does policy extraction) : 3
termsfeed.txt
auravision.txt
policies.txt
Traceback (most recent call last):
  File "c:/Research\MAOP\Research Code\maop_summer_research\GenAI Prompt Engineering\gemini_prompts.py", line 76, in <module>
    prompt(prompt_num)
  File "c:/Research\MAOP\Research Code\maop_summer_research\GenAI Prompt Engineering\gemini_prompts.py", line 70, in prompt
    f.write(response.text)
    ^^^^^^^^^^
response to contain a valid 'Part', but none were returned. The candidate's [finish_reason](https://ai.google.dev/api/generate-content#finish
reason) is 4. Meaning that the model was reciting from copyrighted material.
```

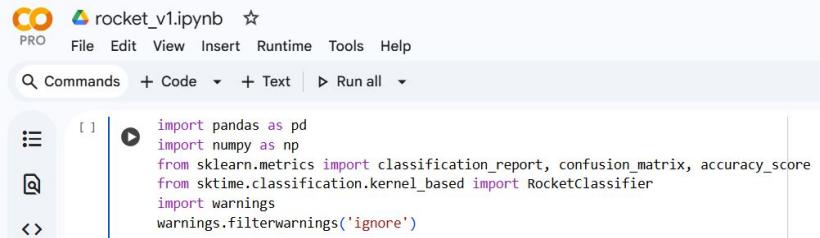
Spatial Seer - Issues & Future Plans

Issues

- Of 100+ trials: 5 unusable by a corruption of data, 15 unusable due to collection method error. Upon redoing these 20 trials, all 20 became unusable due to headset update
 - Accuracy to the model reduced to around 55%
 - Office room with blinds_up is the biggest culprit
- Data is not able to be fixed - as a result, we're chopping the room with most of the unusable data
- Too much data to run locally on Jupyter notebook, so I switched to Colab for T4 GPU from cloud

Future Plans

- Going to try to salvage Perfetto model without the 20 post-update trials
- Collecting 50 Trials with Unity Profiler today, 50 by next Wednesday
- Going to build new Unity Profiler



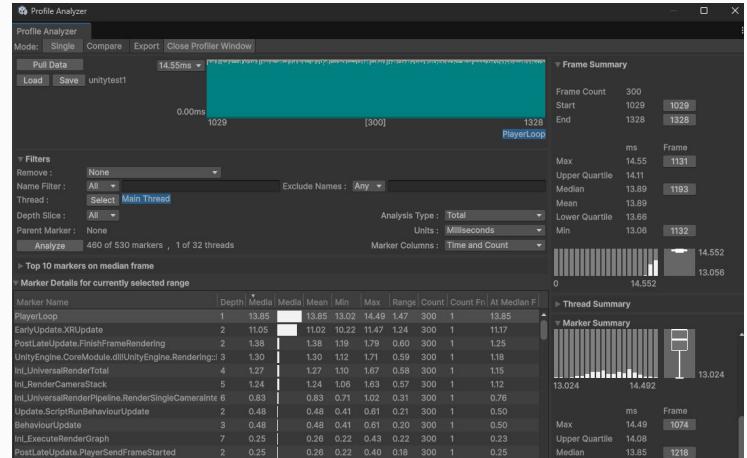
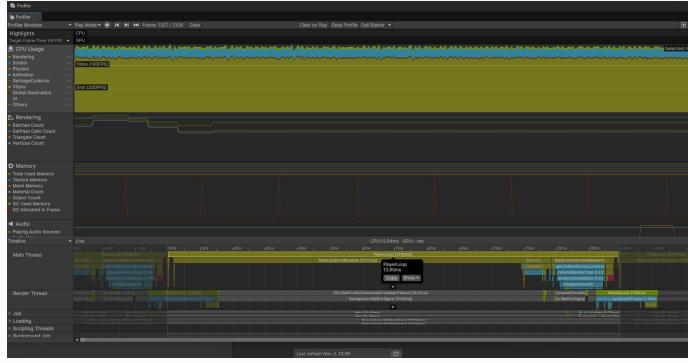
The screenshot shows a Google Colab interface with the following details:

- Title:** rocket_v1.ipynb
- File Menu:** File, Edit, View, Insert, Runtime, Tools, Help
- Toolbar:** Commands, + Code, + Text, Run all
- Code Cell:** Contains Python code for importing pandas, numpy, and scikit-learn modules, and defining a RocketClassifier.

```
import pandas as pd
import numpy as np
from sklearn.metrics import classification_report, confusion_matrix, accuracy_score
from sktime.classification.kernel_based import RocketClassifier
import warnings
warnings.filterwarnings('ignore')
```

Spatial Seer - Unity Profiler + Analyzer

- Figured out how to export data in CSVs
- Data is rich with memory and CPU usage
- Work-in-progress: remote data collection



Spatial Seer - Unity Profiler + Analyzer

```
sample_unity1_frame.csv > data
1 Frame Offset; Frame Index; Frame Time (ms); Time from first frame (ms)
2 0;1029;13.19662;0
3 1;1030;14.28557;13.1966161727905
4 2;1031;13.94115;27.4821910858154
5 3;1032;13.7574;41.4233379364014
6 4;1033;14.11089;55.1807346343994
```

```
sample_unity1_marker.csv > data
1 Name; Median Time; Min Time; Max Time; Median Frame Index; Min Frame Index; Max Frame Index; Min Depth; Max Depth; Total Time; Mean Time; Time Lower Quartile; Time
2 "PlayerLoop";13.85334;13.02427;14.49224;1218;1132;1074;1;1;415.2665014267;13.85089;13.62511;14.07755;300;1;1;1;300;1029;13.02427;14.49224;1132;1074;13.85365
3 "EarlyUpdate.XRUpdate";11.05464;10.22453;11.46646;1277;1075;1067;2;2;3306.37568664551;11.02125;10.88109;11.17068;300;1;1;1;300;1029;10.22453;11.46646;1075;1067;11.
4 "PostLateUpdate.FinishFrameRendering";1.376615;1.190156;1.792969;1307;1029;1074;2;2;413.902115345001;1.379674;1.313698;1.432084;300;1;1;1;300;1029;1.190156;1.79296
5 "UnityEngine.CoreModule.dll!UnityEngine.Rendering::RenderPipelineManager.DoRenderLoop_Internal() [Invoke]";1.300365;1.120208;1.70625;1279;1029;1074;3;3;390.3979195
6 "Inl_UniversalRenderTotal";1.274948;1.095157;1.673386;1279;1029;1074;4;4;381.992125511169;1.273307;1.210677;1.325677;300;1;1;1;300;1029;1.095157;1.673386;1029;1074
7 "Inl_RenderCameraStack";1.238855;1.06276;1.629739;1031;1029;1074;5;5;371.335083007813;1.237784;1.174427;1.287187;300;1;1;1;300;1029;1.06276;1.629739;1029;1074;1.12
8 "Inl_UniversalRenderPipeline.RenderSingleCameraInternal: CenterEyeAnchor";0.827604;0.788229;1.021407;1154;1163;1303;6;6;249.84564268589;0.8328188;0.776875;0.883959
9 "Update.ScriptRunBehaviourUpdate";0.478125;0.408125;0.613542;1273;1246;1047;2;2;145.434654980898;0.4847822;0.458282;0.507813;300;1;1;1;300;1029;0.408125;0.613542;1
10 "BehaviourUpdate";0.476928;0.407032;0.611875;1236;1246;1047;3;3;145.0225687325;0.4834086;0.456719;0.506354;300;1;1;1;300;1029;0.407032;0.611875;1246;1047;0.503438
11 "Inl_ExecuteRenderGraph";0.252084;0.216094;0.433334;1153;1325;1245;7;7;79.1130767762661;0.2637103;0.240209;0.27875;300;1;1;1;300;1029;0.216094;0.433334;1325;1245;0
12 "PostLateUpdate.PlayerSendFrameStarted";0.247084;0.223021;0.400572;1128;1132;1172;2;2;76.6318766772747;0.2554396;0.237135;0.259636;300;1;1;1;300;1029;0.223021;0.40
```

Questions

1. What direction do you think we should continue in now that the cyber attack we originally intended to do cannot be completed? - Kim