Sprint 2 Planning

Sprint team members

Name	Role
Sicheng NIE	Scrum Master
Renwei Hu	Product Owner
George Wang	Architecture Lead
Siyi Liu	Development Environment Lead
	Deployment Lead

Objectives

1. Apply for lab access
2. Set up development environment and robot simulator
3. Object detection and tracking
4. Voice recognition and translate voice commands to pre-defined actions
5. Set up a code review workflow

Sprint 2 backlog

Epic	Epic ID	Task	Sub Task	Task ID	Story Point (1-10)	Assignee	Priority	Status
General Admin	GA	Documentation Update	Finish Sprint 2 planning	GA 2.7	4 pt	All	HIGH	DONE
			Sync Sprint 2 tasks to Trello	GA 2.8	2 pt	All	HIGH	DONE
			Weekly Trello screenshot	GA 2.9	1 pt	Renwei Hu	MEDIUM	DONE
			Check sprint checklist	GA 2.10	2 pt	Sicheng NIE	HIGH	IN PROGRESS
			Plan for Sprint 3	GA 2.11	2 pt	Siyi Liu	MEDIUM	IN PROGRESS
			Project scope adjustment	GA 2.12	2 pt	Renwei Hu	MEDIUM	DONE
		Meetings	Meeting minutes	GA 3.3	3 pt	George Wang / Renwei Hu	MEDIUM	IN PROGRESS
			Create a client meeting Zoom link	GA 3.4	1 pt	Renwei Hu	MEDIUM	DONE
		GitHub	Upload relevant sprint docs	GA 4.2	3 pt	All	HIGH	IN PROGRESS
			Create a repo for computer vision	GA 4.3	1 pt	Renwei Hu	HIGH	DONE
			Branch naming convention	GA 4.4	1 pt	Renwei Hu	MEDIUM	DONE
		Tools documentation	Tech stack	GA 5.1	3 pt	All	HIGH	DONE
			Env configuration guide	GA 5.2	3 pt	Renwei Hu	MEDIUM	DONE
			Official guide (link)	GA 5.3	1 pt		LOW	TO DO
			Coding standards	GA 5.4	2 pt	Renwei Hu	MEDIUM	DONE
			Deprecated tools justification	GA 5.5	3 pt	Renwei Hu / George Wang	MEDIUM	IN PROGRESS
		Code review	Create a code review process	GA 6.1	2 pt	Renwei Hu	HIGH	DONE
			Code review template	GA 6.2	3 pt	Renwei Hu	MEDIUM	DONE
		Ethical consideration		GA 7.1	3 pt	Sicheng NIE	MEDIUM	IN PROGRESS

		Cyber security consideration		GA 8.1	3 pt	George Wang	MEDIUM	DONE
		Development related	Evidence of progress (Project demo)	GA 9.1	4 pt	Renwei Hu / Sicheng NIE / George Wang	HIGH	IN PROGRESS
			Architecture explanation	GA 9.2	3 pt		LOW	TO DO
			YOLO pre-trained model comparison	GA 9.3	2 pt	Renwei Hu	MEDIUM	DONE
			2D object detection topic messages	GA 9.4	3 pt	Renwei Hu	MEDIUM	DONE
			Depth camera mounting analysis	GA 9.5	5 pt	Renwei Hu	MEDIUM	DONE
			3D printed mounting device progress	GA 9.6	5 pt	Renwei Hu	MEDIUM	DONE
Detect objects visually (Computer Vision)	CV	Background research	Familiar with YOLO	CV 1.1	4 pt	Renwei Hu	HIGH	DONE
			Research on other useful tools	CV 1.2	2 pt	Renwei Hu	MEDIUM	DONE
		2D Object detection	Try with YOLO object detection	CV 2.1	4 pt	Renwei Hu	HIGH	DONE
			YOLO streaming video object detection	CV 2.2	6 pt	Renwei Hu	HIGH	DONE
			Look into MediaPipe Objectron	CV 2.3	6 pt	Renwei Hu	HIGH	DONE
			Create a YOLO object detection node	CV 2.4	10 pt	Renwei Hu	HIGH	DONE
			Extract detected object label + coordinates	CV 2.5	4 pt	Renwei Hu	HIGH	DONE
			Publish 2D coordinates messages to topic	CV 2.6	3 pt	Renwei Hu	HIGH	DONE
		Human gesture	Try with ROS4RHI?	CV 3.1	8 pt	George Wang	HIGH	DONE
		Face detection	Try with ROS4RHI?	CV 4.1	8 pt	George Wang	MEDIUM	DONE
		3D Object detection	Get Azure Kinect & Real Sense depth camera	CV 5.1	2 pt	Renwei Hu	HIGH	DONE
			Set up depth camera	CV 5.2	5 pt	Renwei Hu	HIGH	IN PROGRESS
			Modify 3D print CAD model	CV 5.3	6 pt	Renwei Hu	HIGH	IN PROGRESS
Interact with the environment arurally (Voice Recognition)	VR	Background research	Natural language voice commands	VR 1.1	4 pt	Sicheng NIE	HIGH	DONE
			Text translation GPT	VR 1.2	4 pt	Sicheng NIE / Siyi Liu	HIGH	DONE
			Integrate demo code to ROS2 node	VR 1.3	2 pt	Sicheng NIE	HIGH	DONE
			Create a separate account for refund	VR 1.4	1 pt	All	LOW	IN PROGRESS
			record mic and generate .wav	VR 1.5	4pt	Sicheng NIE	HIGH	DONE
			record the demo process	VR 1.6	4 pt	Sicheng NIE	HIGH	DONE
~~Integrate visual and audio inputs (Decision Making)~~	~~DM~~							
Move robotic arm (Robotic Control)	RC	Background research	Familiar with ROS	RC 1.1	5 pt	All	HIGH	IN PROGRESS
			Research on ROS4HRI	RC 1.2	4 pt	All	HIGH	IN PROGRESS
~~Check & adjust system status (System Status)~~	~~SS~~							

Potential risks

Risk	Mitigation
MediaPipe Objectron is not suitable for the project	Switch to using depth cameras to capture additional spatial information

Sprint planning resources

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