

Expression of Interest	
Project Title	FindAR
Organisation or Supervisor	IBM
Contact person (sponsor)	John McNamara
Contact email	J0nnymac@uk.ibm.com
Team Number:	29
Team Members	
Name	Email Address
Vishal Pittala	psyvp2@nottingham.ac.uk
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Description of Team Skills (You must provide clear evidence of to what extent the team has the Highly Desirable and where possible the Desirable Skills detailed on the Original Project form)	
<p>Our interest in this project stems from the fact that it produces an innovative solution to a modern-day problem of losing personal items, faced by almost everyone, especially the elderly. We are passionate about working with IBM because of their diversity in the field and ability to renew themselves by creating new markets to explore.</p> <p>IBM's core values resonate strongly within our team, especially "Innovation that matters" which is why we are hoping to take up this project. As a team, we are eager to put together our experience in web development with HTML/CSS, with back-ends in JavaScript and PHP, towards the project. Within the team, we also have members with multiple experience in creating web servers on Google Cloud and Digital Ocean pertaining to things like word press websites, VPNs, PHP websites etc.</p> <p>The primary stakeholder would be the elderly and those with illnesses affecting memory. However, the problem of losing important objects in day-to-day life is so universal that an application allowing users to keep track of their belongings would be useful for everyone. IBM has already shown that AR and mixed reality are extremely useful in the workplace, with the combination of digital content with the real-world improving productivity, and these benefits could easily be applied to personal applications.</p> <p>While text could be used as a means of interacting with the application, the use of speech to text as the main method of creating, finding and interacting with tags would make the application more accessible. The simplicity of being able to easily and quickly place tags through a spoken command as an alternative to navigating GUIs and typing in labels would streamline the use of the app and most importantly keep the app easy to understand for the target end user.</p> <p>There are products with a similar goal on the market, such as Apple's AirTag and Samsung's Galaxy SmartTag+, which track the location of belongings.</p>	

However, we believe that this project would be an improvement over these products, as it eliminates the need to purchase a physical tag, making the solution to losing objects accessible to a wider range of users, as well as lifting the restriction of the number of objects tracked at once to the number of physical tags owned.

For the development of this project, we analysed whether it would be better to create a web or android app, ultimately, we decided on a web app. Web apps have reduced native functionality, but they can be deployed on multiple platforms whilst requiring only a single codebase to maintain. This means they are faster to develop to a wider audience, which would suit our current timeframe. We can use pre-existing open-source frameworks and libraries such as Three.js, X3DOM and A-Frame to aid us with development due to their wide range of capabilities and features. We will also use AR.js which is a library that builds upon three.js and A-Frame to provide seamless AR implementation on a wide range of browsers.

The main challenge in this project is using location data to track where certain items are, this brings the issues of inaccurate distance calculation and misinformation from sensors. Many companies fear AR as they do not know what it entails and disregard it as a "gimmick", we hope to use this project as a stellar example of how useful AR can be.

In terms of management style, our plan is to follow Agile processes, more specifically a mixture of SCRUM and Kanban methodologies. For example, having team roles and sprints of work like in SCRUM as well as allowing for changes to be made mid-stream, allowing for iterations and continuous improvement which follows Kanban.

We will also aim to set standards for the code by creating coding conventions to allow for better readability, one way to do this would be to focus on Test Driven Development, which allows us to plan the code before it is written, meaning there needs to be less changes in the future. During the testing process, we will implement Unit & Integration testing to make sure all functions work together and individually.

To help overcome skills gaps within the team and to improve efficiency we will implement paired programming and sub-teams which also allows for an informal review process. This also means that if in case one member of the team is unable to work for a period then the members of the sub-team can take over.

Date of Submission of EoI	19 th of October 2022
Date of Pitch	26 th of October 2022
Notification of award	

Please make sure to submit a CV for each member of the team together with the EoI using the submission format available on Moodle.