Quick Autonomous Pointer With Local Positioning

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Our service allows simplification of sightseeing for independent travelers and visitors to exhibitions, museums, shopping centers and open-air panoramic points, as well as speeding up and reducing the cost of creating a navigation infrastructure in the relevant facilities. It works as a pointer to interesting objects on which the device camera aimed at or as a short text guide to them. The service consists of two parts: pre-designed fixed viewpoints and a mobile AR application on Android. Analogues allow the traveler to navigate in the mountains in AR format, but often they are adapted only for working in popular areas using GPS and Internet data. While our service does not require an Internet connection, it stores data on points of interest locally, in a QR code located next to a special mark. This approach allows users to create data for points of interest independently, unlike analogues that use private databases and centrally manage them. We abandoned GPS geolocation and limited ourselves to positioning tasks only in a certain area around the point precisely defined on the terrain. All calculations of directions and distances are performed relative to it through three-dimensional geometry and data from the accelerometer and compass. This sets a geographical limitation on the use of the service, but reduces the positioning error in the horizontal plane from ±3m to ±1m, in the vertical - from ±10m to ±0.5m, and provides, unreachable to most analogues, which rely on GPS, the ability for use indoor. In our opinion, the service can satisfy the basic needs of knowledge in an independent journey and replace the guide. The service focused on being as simple as possible to use for visitors and employees of tourist attractions around the world.

Awards Won: