

Introducing AR in Android (with ARCore)

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ARCore gives developers an environment to develop AR application easier by handling the hard works in image processing, geometric mapping...also providing helper interfaces (connecting to camera, light estimations...)

Facts:

- Is recently released from Google in a very competing moment with iOS's ARKit.
- This rush release is actually being done by renaming jobs from the Tango Project.
- But taken quite many nice things from the legacy of Tango.
- Less hardware dependencies (still having constraints for experimental).

In-depth: basic 3D Model components

- Object frame (.obj)
- Object material (.png, .mtl..)
- Object shader (.shader)
- OpenGL Surface to render the objects.

In-depth: ARCore components

- **Session:**
 - The main component, the entry of an AR experiment.
 - Holding information of the global state: tracking anchors, planes, camera state, hit test...
- **Anchor:**
 - An object used to to identify an Object's position/rotation in the AR world.
 - Contains Pose.
- **Plane:**
 - The understanding knowledge of a real world planar surface (from the machine perspective)
- **Pose:**
 - Best understanding as a rigid transformation of coordinators from local to world coordinate frame (which is flexibly changed usually).
- **Frame**
 - A snapshot of an AR State at a given timestamp (it has everything above).

DEMO TIME

Achievements and progress

- Already build up a demo based on the Google sample.
- Interacting with objects by Double Taps, Dragging object.

Next Steps

- Animating objects would be great.
- Establish a cooperation process with sound, lighting, object transformations to provide better AR experiments.
- See what people have done with it:
 - <https://experiments.withgoogle.com/ar/draw-and-dance>
 - <https://experiments.withgoogle.com/ar/hidden-world>

Thanks!

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