made for free at coggle.it

See "3D SURF" for another method

just be "an obstacle" for the scope of this particular project Probably will required a lot of storage. Is there any available for masters students? See "Sliding Shapes for 3D Object Detection in Depth Images" (do a google scholar search) Another machine learning method without depth information (i.e. 2D feature detection) - might include some sign **RGB-D Machine Learning** recognition? ANN OCR? New Obstacles Needs to learn where entrances to buildings are OpenSURF -Needs applet developing to take photospheres with depth How much space is there for deviation from the original information design document? Like "Beme" - hold any reasonable smartphone to the user's chest and infer an obstacle Needs kerb heights measured Tango Data Collection - half C++ half Java. I.e. Identifying objects on route Steps too - i.e. by Augustus John pub Then re-route the user accordingly Might end up being in further research. But it would be a Texture information is also important? Pretty sure Neil great feature to have mentioned this. Can be gleaned from RGB data Geospatial Macro Level Feature Databas Needs to reject people and cars... (Outdoor Feature Mapping) with an oper Helps with the mapping effort Possible extensibility for public transport information (OCR? Link with Google maps?) OSM does not have public transport routes Uploads take ~1 day (further testing will commence) Keep as predefined routes Upload 360 photospheres to Street View But there might be a Google maps API? 2D images downloaded back from StreetView. Also see https://stackoverflow.com/questions/29916149/google-maps-Load entire area of geocoded features Explore entire campus streetview-how-to-get-panorama-id # NB: photospheres uploaded successfully to google do NOT Data Organisation and web Highlight key waypoints have blurred out numberplates etc. The app does have the API Fetching function to blur things out manually however. Would increase Could be done via the exisiting streetview imagery as Neil mapping time but would keep everything above board Predefined exploration paths Explore North Campus Explore Engineering Models of features could be derived from manual photogrammetry. (i.e. features that will train the machine Or photogrammetry from 360 images taken with the tango device learning classifier of new features found in the local liverpool Get routes via OSM via web API OSM does GPS traces Add in features from server database Routes via Mapzen or GraphHopper (both of which are proven to Route Mapping (OSM Routes with macro level work with OSM) Relative positions of features stored in something like a features overlayed) PostGIS database Present route with features to user Add in weather information? (Probably for future work) Compass headings of 2D images compared with headings of OSM routes - to find correct features in the path of the user. Might need further (supervised) machine learning to determine But the features will already be in the database - might be USEFUL features - i.e. waypoints useful for VI users more useful for the RGB-D learning step. But will introduce a lot of (possible quite useful) redundancy due to each feature being captured multiple times

Don't necessarily need to fully classify the obstacle - might

the outdoors at daytime. Might be best to map in early evening/night. Street View does not have day/night cycles? See: https://stackoverflow.com/questions/32239932/doesthe-project-tango-tablet-work-outdoors and video: https://www.youtube.com/watch?v=DhdaV3NmN88 and also video: https://www.youtube.com/watch?v=DhdaV3NmN88

Investigation needed for effectiveness of outdoor Tango in

The photosphere feature should be open source - have a look at: https://android.googlesource.com/platform/packages/apps/Camer

Version of Android (that can probably be updated) on the P2P is