



SpatialGuide

THE TEAM



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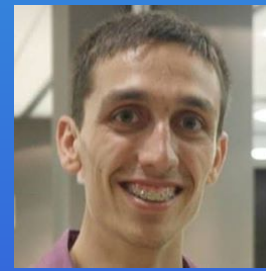
Cristiano Vagos



Miguel Brás



Ricardo Pombeiro



Daniel Carvalho



Nuno Barbosa

WHY?





11,9 B €

Tourism direct contribution to GDP in Portugal.



17 M visitors

Record breaking stats!



12% increase

Over 2016 stats.

A WHOLE **WORLD** TO BE EXPLORED!



A photograph showing the interior of a double-decker sightseeing bus. The bus has a glass roof and large side windows. Passengers are seated in red plastic chairs, mostly facing forward. In the foreground, a man in a grey shirt is seen from the side, holding a brochure. Next to him, a woman in a red cap is also visible. The bus is moving through a city street, with buildings and trees visible through the windows. A white rectangular box with the text "FOR WHOM?" is overlaid on the left side of the image.

FOR WHOM?



TRAVEL ENTHUSIASTS

Who seek a more immersive experience in
their travels!



TOURIST GUIDES

That will have another attraction to
sightseeing tours

THE SOLUTION!

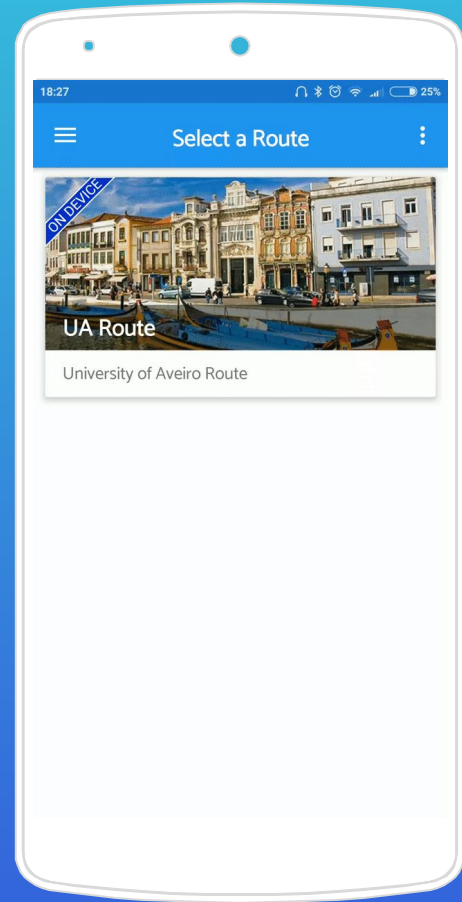




SpatialGuide

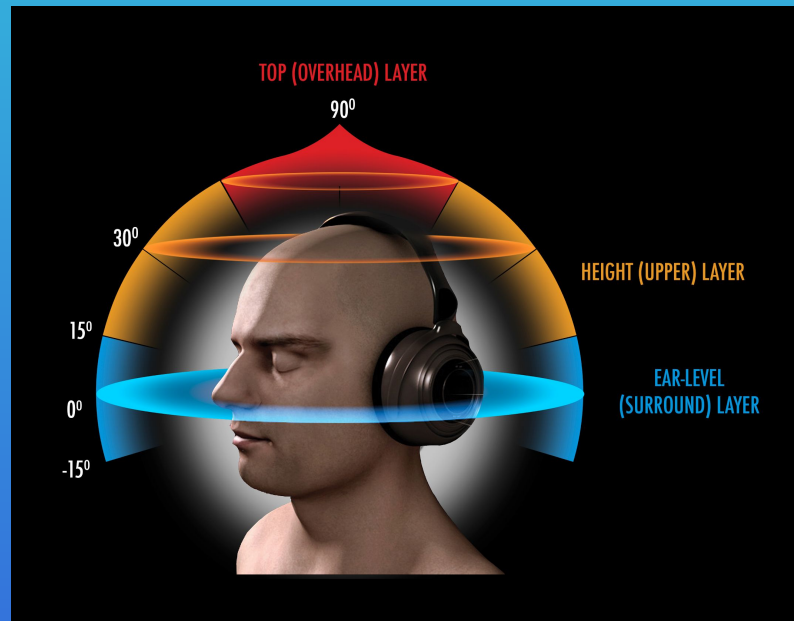
ANDROID SMARTPHONE APP

Audio-guiding app that tracks current location, and provides info on points of interest in tour routes, using...



SPATIAL AUDIO EFFECT

To give the illusion that the sound is actually coming from that given point (3D Audio).

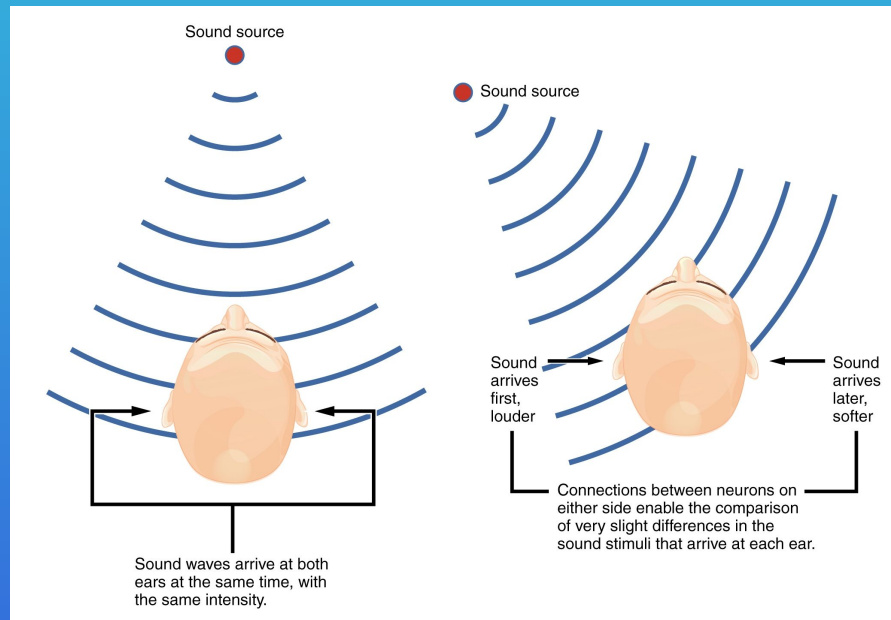


HOW SPATIAL AUDIO WORKS?



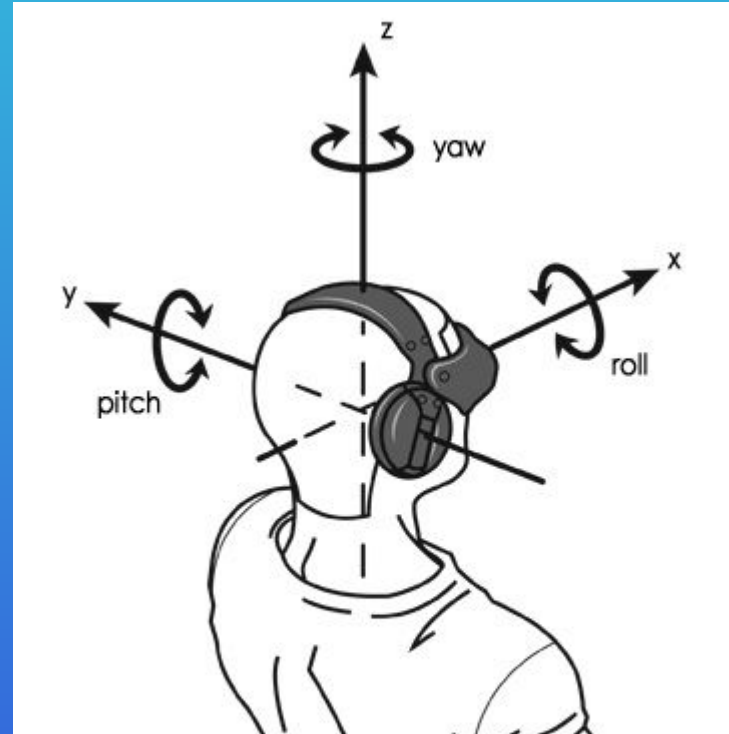
AURALIZATION

Creation of audible acoustic sceneries from computer-generated data.



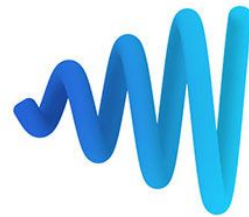
TRACKING HEAD POSITION

In order to simulate how the user ears the sound coming from a certain point.



POWERED BY RESONANCE AUDIO

Google's spatial audio
software development kit
used in our Auralization
engine



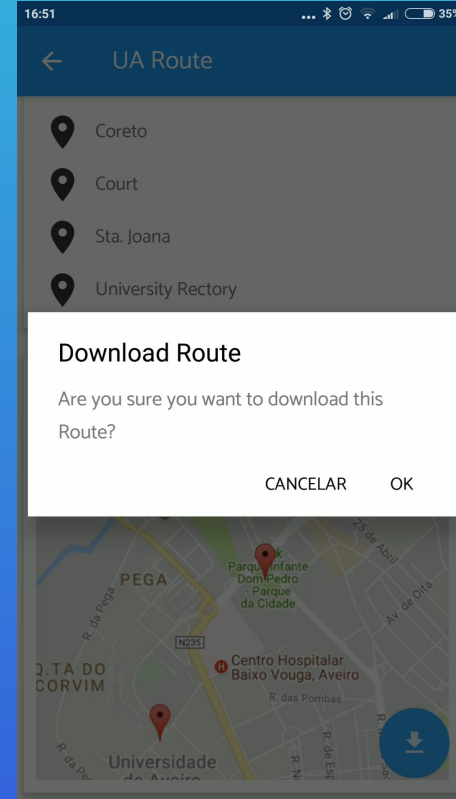
Resonance Audio
by Google

A man and a woman are standing outdoors, taking a selfie. The man is holding a smartphone up, and the woman is looking at the screen. They are both wearing black leather jackets. The woman has a tan leather bag slung over her shoulder. In the background, there are palm trees and a clear blue sky. A white rectangular box is overlaid on the right side of the image, containing the text "WHAT MORE CAN YOU DO?".

**WHAT MORE
CAN YOU DO?**

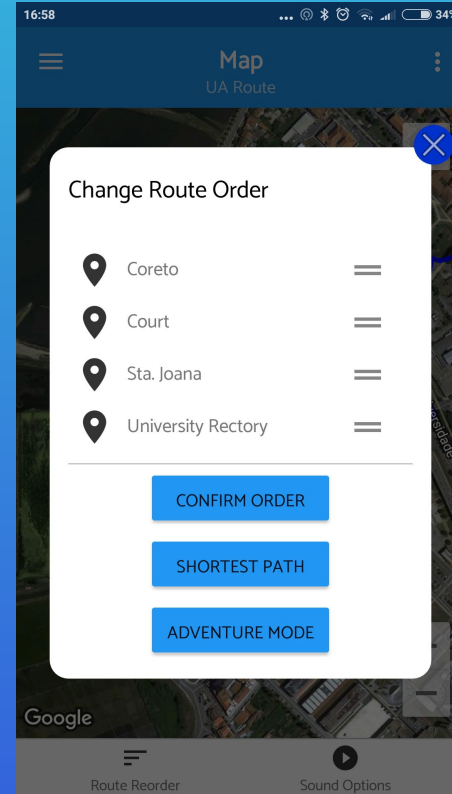
DOWNLOAD NEW ROUTES

- You can download routes to your device and start exploring.



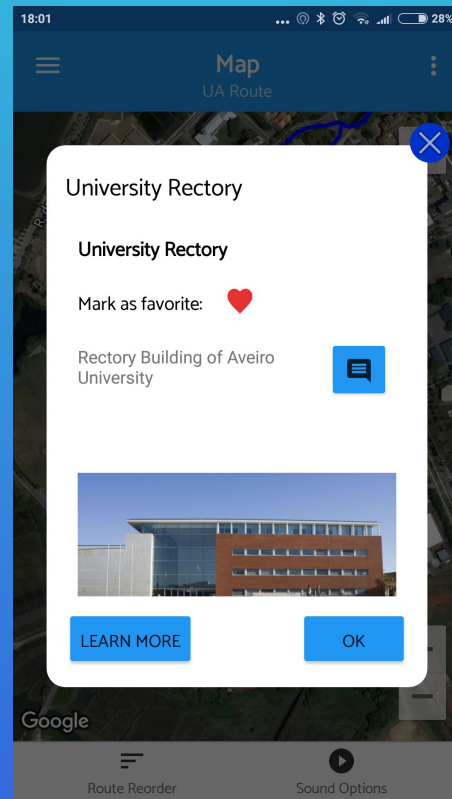
MULTIPLE WAYS TO EXPLORE

- Adventure Mode
- Shortest Path
- User custom



USER TAILORED EXPERIENCE

- Read and write comments on your favorite points.
- Mark a route and/or point as favorite.
- Suggest new points.



WHAT CAN THE TOURIST GUIDES DO?

21



CREATE NEW EXPERIENCES

- Create new Points.
- Create new routes and add points to it.

SpatialGuide Admin

Dashboard / Add Point

↑ Routes
↑ Add Route
⊙ Points
⊙ Add Point
Heat Map
User Suggestions
User Comments
Register new User

Hi, Nuno Logout

Mapa Satellite aveiro reitoria

✚ Add Point

Name
University Rectory

Url
<http://www.ua.pt/reitoria/page/11249>

Description
University of Aveiro Rectory Building

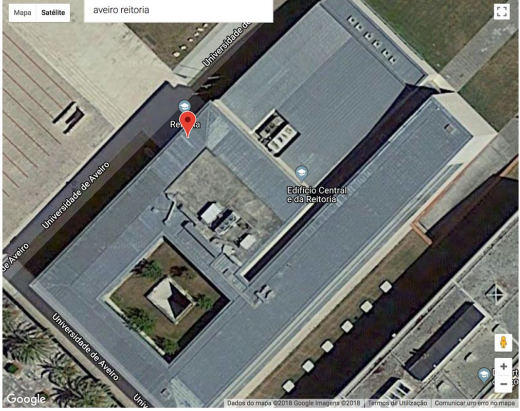
Latitude
40.6312519849683

Longitude
-8.65763487595523

Image
Choose file Reitoria.jpeg

Sound
Choose file Dowland_44k.wav

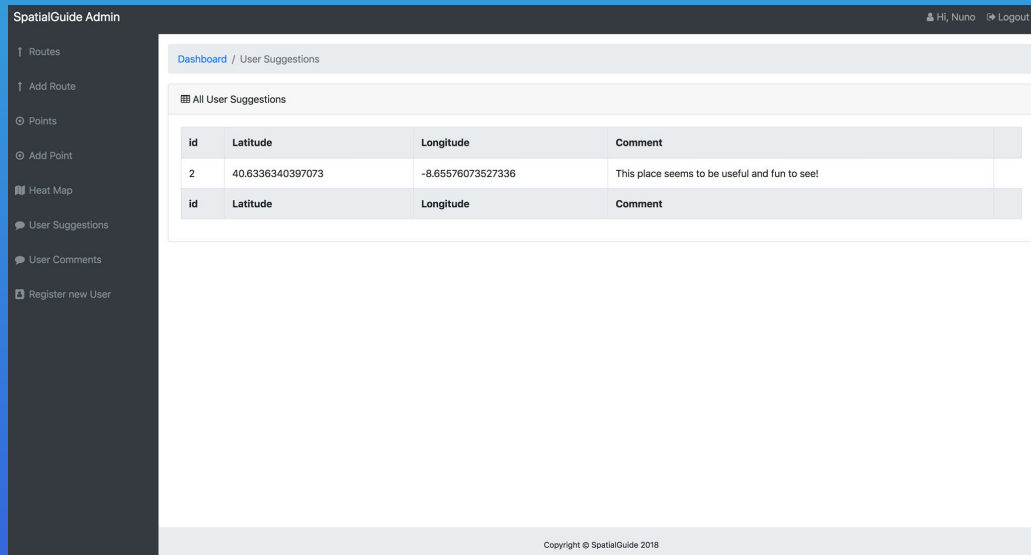
OK



The image shows a satellite map of the University of Aveiro Rectory Building. A red pin is placed on the building, and a label 'Reitoria' is next to it. Another label 'Edifício Central e da Reitoria' is also visible. The map is part of a web interface for adding a new point to a SpatialGuide Admin dashboard.

ACCESS TOURIST FEEDBACK

- Read the tourists comments.
- Check the tourists suggestions.
- See the most visited locations.



The screenshot displays the 'SpatialGuide Admin' interface. On the left is a dark sidebar with navigation links: Routes, Add Route, Points, Add Point, Heat Map, User Suggestions (highlighted), User Comments, and Register new User. The main content area shows the 'Dashboard / User Suggestions' page. It features a section titled 'All User Suggestions' containing a table with one data row and two header rows.

id	Latitude	Longitude	Comment
2	40.6336340397073	-8.65576073527336	This place seems to be useful and fun to see!
id	Latitude	Longitude	Comment

The footer of the dashboard indicates 'Copyright © SpatialGuide 2018'.

TOOLS USED FOR DEVELOPMENT

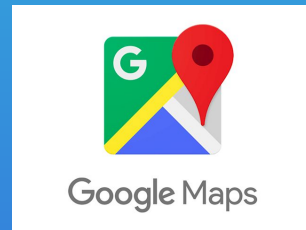
In the app:



Butter Knife



Google Play
Services



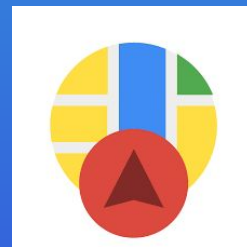
Google Maps



Android



Retrofit



Google
Directions API

TOOLS USED FOR DEVELOPMENT

In the app:



Google VR



Fabric



Pusher



Firebase



Crashlytics

TOOLS USED FOR DEVELOPMENT

In the backend:



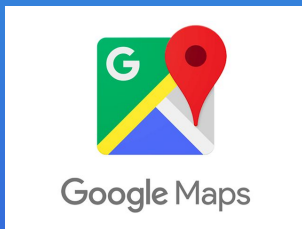
Python



Django



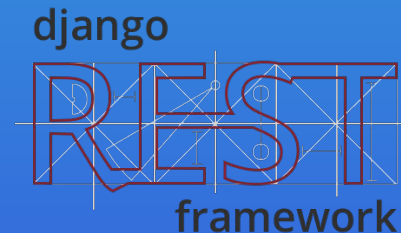
Google Drive



Google Maps

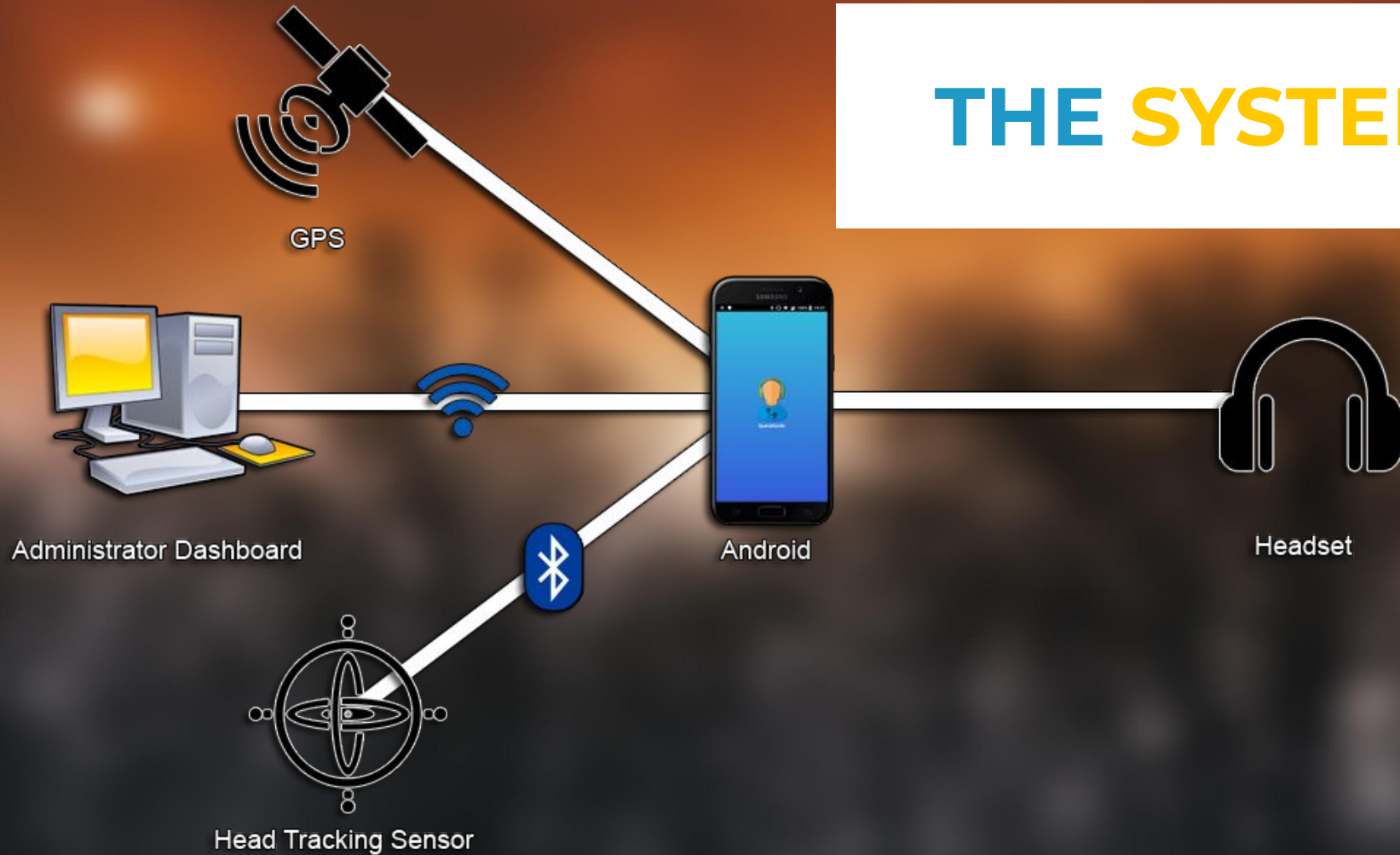


MySQL



Django REST
Framework

THE SYSTEM



■ FUTURE WORK

- Content creation
- System UI/UX improvement
- Develop and embed a IMU sensor on headphones
- Perform wider user tests
- Offer more features...

■ FUTURE WORK

- User Management (Admin point of view)
- Gather more stats on system usage
- Add support for tourist groups

■ FUTURE WORK

- Improve API and its authentication
- Build point information screens
- Offer a streaming tourist guide talk while on bus, f.e.

■ FUTURE WORK

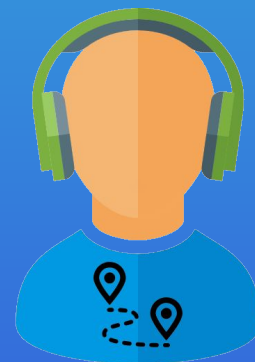
- Change media storage
- Support for offline usage
- Offer more customizable features

THANKS!

Any questions?

You can visit us at:

http://xcoa.av.it.pt/~pei2017-2018_g09/



SpatialGuide