//Final Project

AIR FLOW VISUALISATION

AUGMENTED REALITY

AR app to view air pollution information over a small-scale model, Mobile

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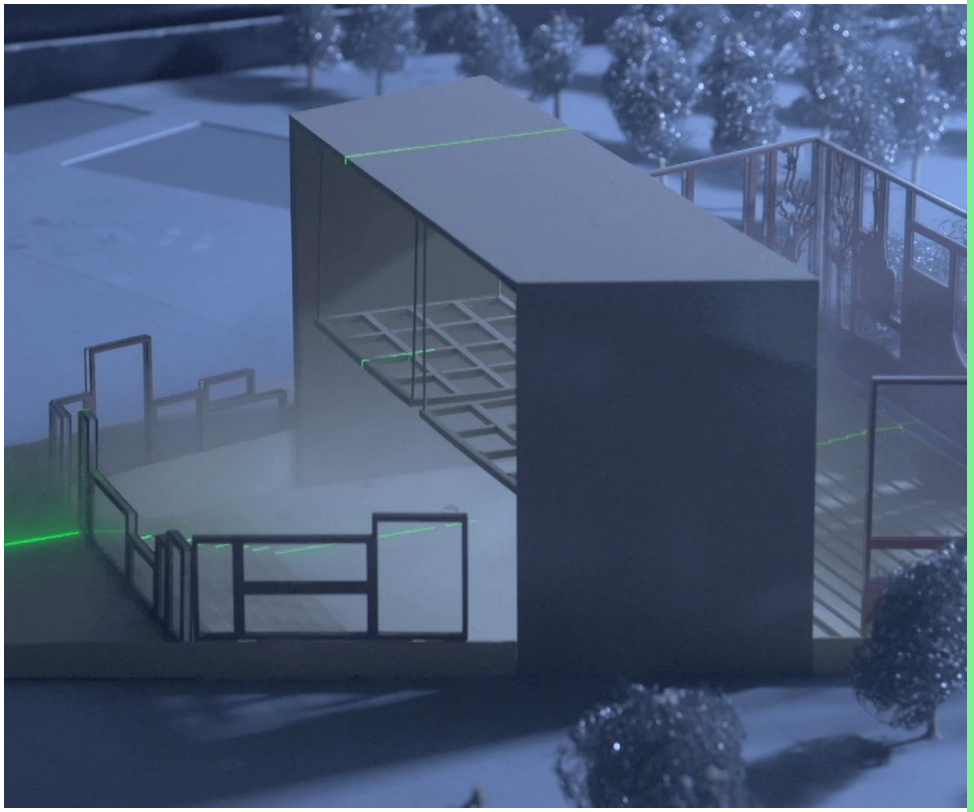
GitHub
Click me

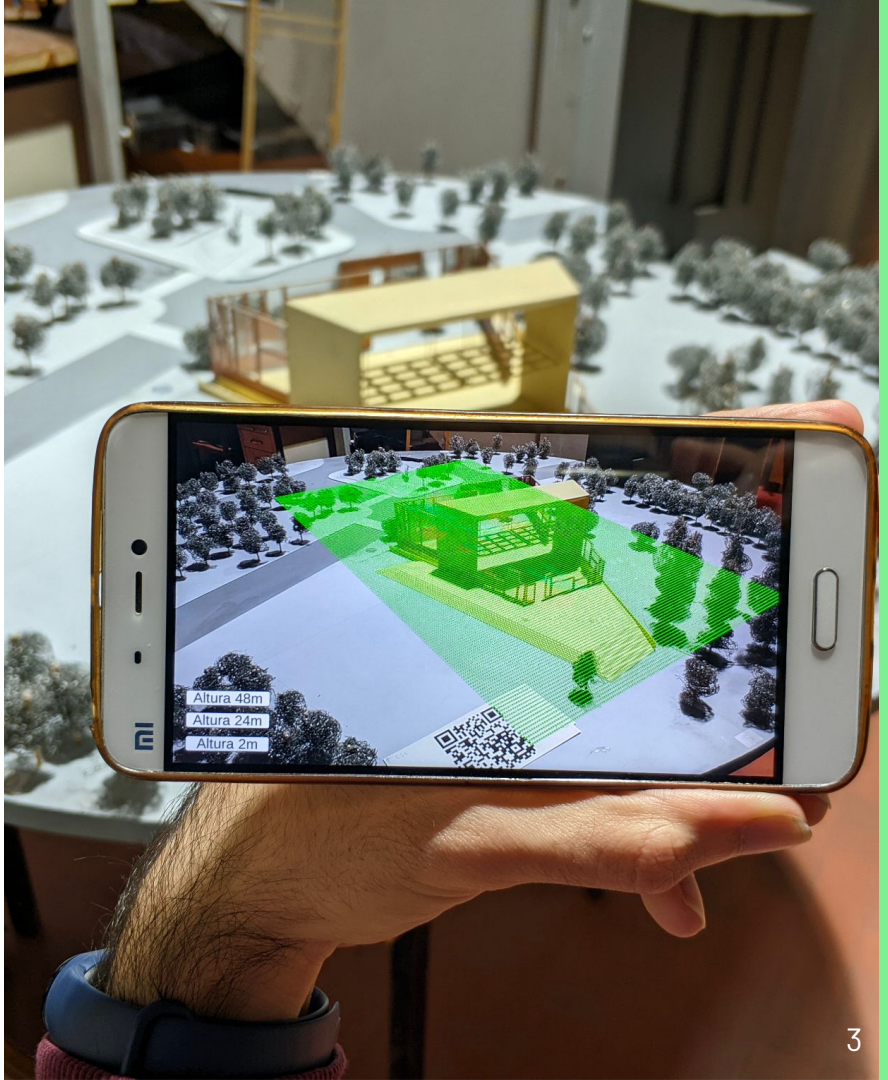
Introduction

- Graphical representation of the Air Flow of the "Auditório José Afonso" (Setúbal)
    - little use due to discomfort caused by wind
    - DAO (Univ Aveiro) made a solution (16m/s -> 6 m/s), not implemented :(
- Integrate Smarphones and Hololens (if possible) - AR



Prototype Developed

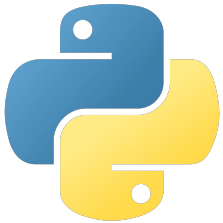
- Compatible with Android
- Import of air speed data at 3 heights (2, 24, 48m)
- Automatic target calibration
- Mesh information display with arrows



Project Structure

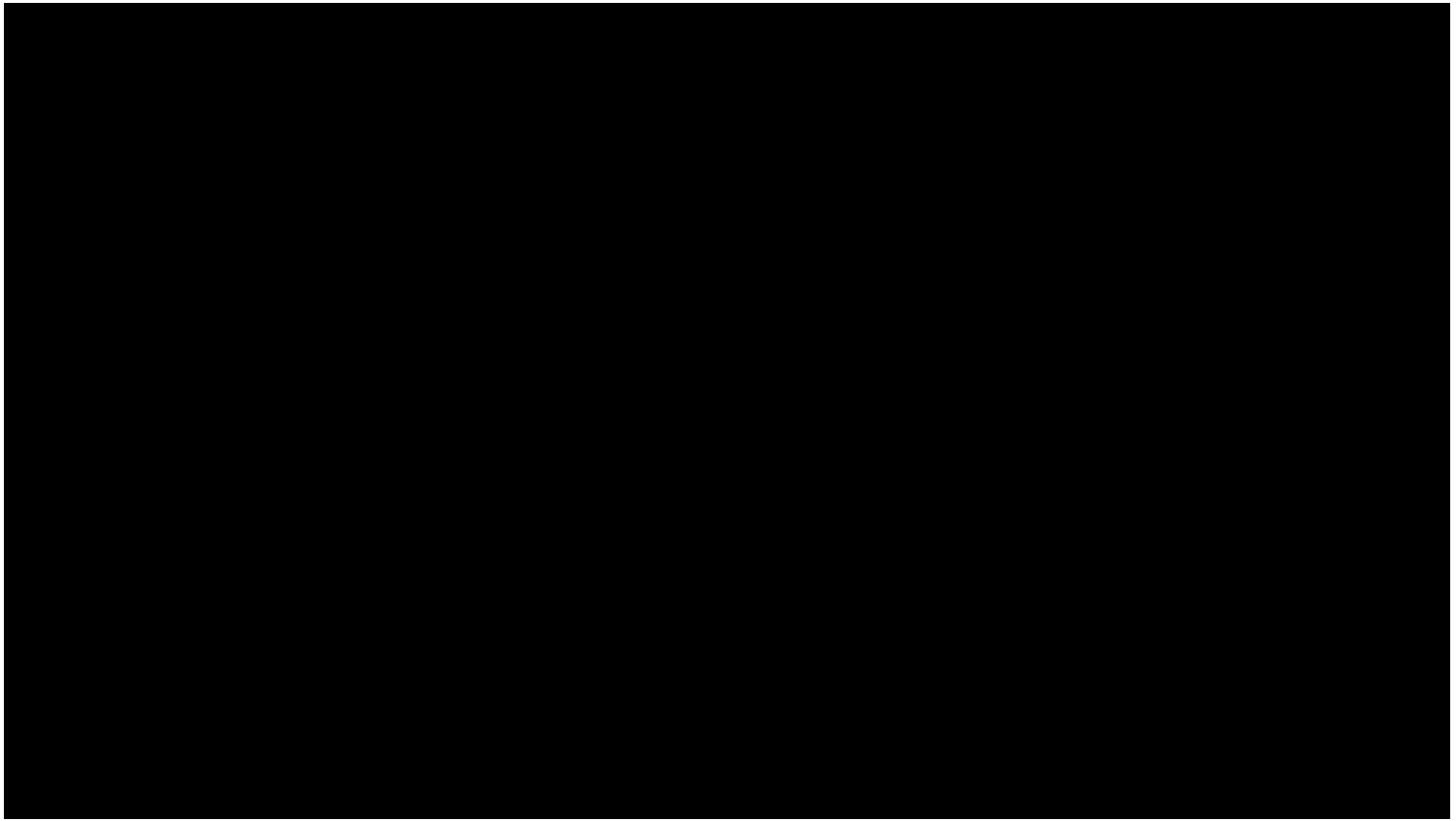
Tools Used

- Unity
- Pyhton - mesh pre-processing



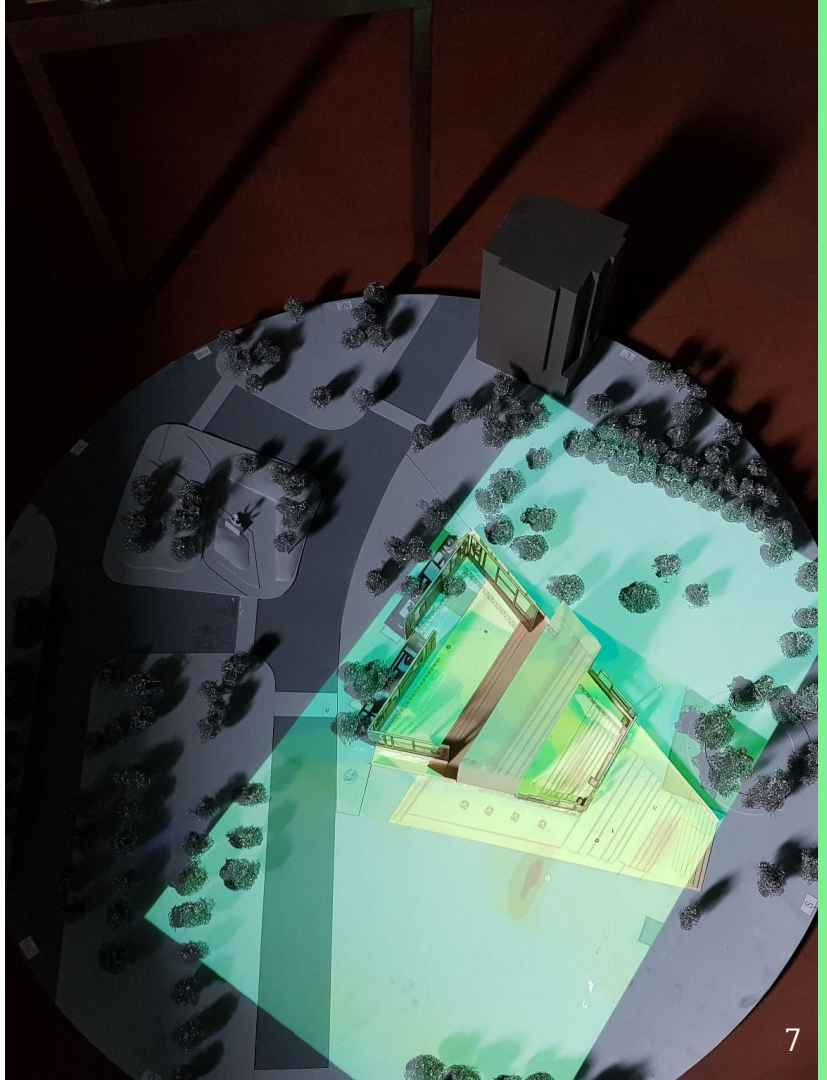
python™

Demo



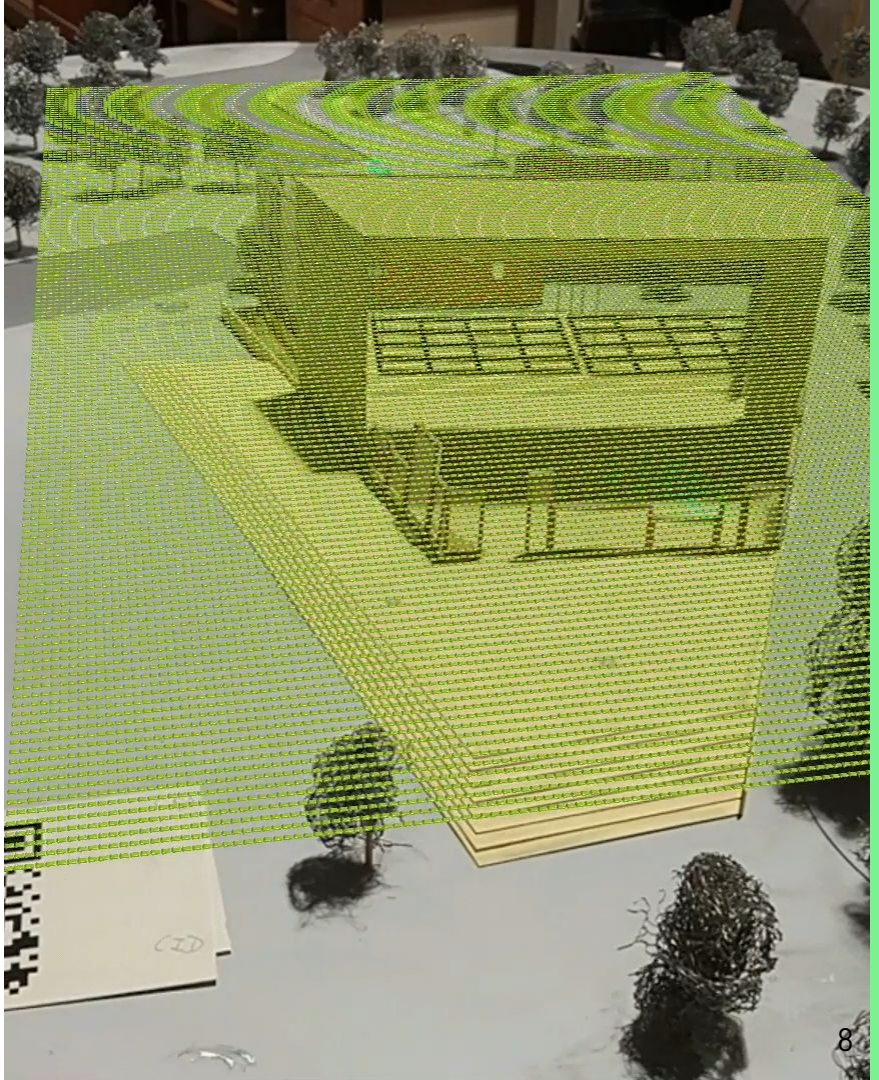
Expectation vs Reality

- Basic user interaction ✓
- Multiple air speed mesh ✓
- Target calibration ✓
- Better performance (mesh resolution)
- Better marker management (location, units)
- Mesh rotation
- Better user interaction
- Integrate Hololens
- Collaboration between devices



Main Difficulties

- Adjust the resolution of the data
- Target calibration (ARCore for vuforia not great...)
- Android compilation



Future Work

- Better performance (mesh resolution)
- Better marker management (location, units)
- Mesh rotation
- Integrate Hololens
- Collaboration between devices