

Overcrowding Management Tool

Slogan or tagline for your project



Team Members (21)

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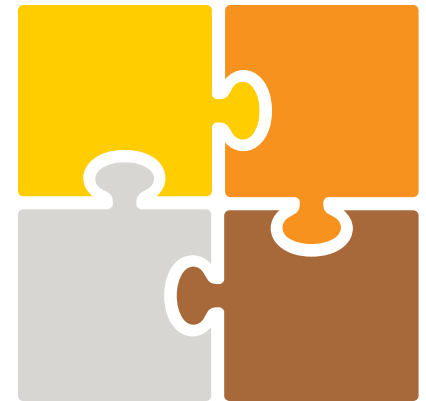
Introduction

A tool for authorities to identify and resolve instances of overcrowding



Background & Motivation

- Background: ...
- Motivation: The Oct 29 Itaewon crowd crush
- Problems to solve:
 - Prevent overcrowding
 - Mitigate the effects of overcrowding
 - Reduce casualties caused by crowd collapses & crushes





What is the **target market**?

Authorities holding large-scale events, such as:

- Market
- Exhibitions
- Carnivals
- Performances (e.g. Concerts)



Are there **existing solutions**?

- Using barriers to limit the flow of people (costly; requires planning)
- Hiring security guards to manage the flow of people (costly)
- Tracking the number of smartphones in the area (may be inaccurate)





What is **our solution**?

- ◉ Identify people in the frame with Computer Vision
- ◉ Count the number of people within the frame
- ◉ Compute the density of people ($\#people \div area$)
- ◉ Alert the authorities if the density exceeds a threshold





Advantages of our solution

- ◉ No need of bulky hardware
- ◉ Low cost
- ◉ No need to exploit users' privacy
(the cameras will have a low resolution such that individual people cannot be identified)
- ◉ Portable and flexible
(the cameras can easily be moved)





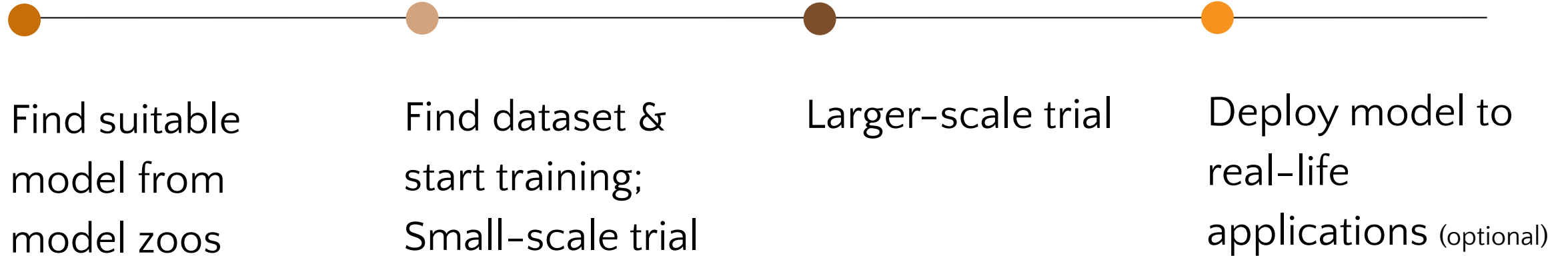
Timeline

7 Jan 2023

28 Jan

11 Feb

31 Mar 2023





Future work

- Use multiple cameras to sense and manage flow of people
- Use route optimization to suggest exit routes (mitigation)
- Identify people who are falling over
To prevent crowd crushes (targeted mitigation)



Thanks!

*Any **questions?***

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