Games and computational social science:

A bridge between academia and industry

CEU CENTRAL EUROPEAN UNIVERSITY

A!

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our goal:

understand human behaviour with (online) data

(small/big) data analysis

online platforms

experiments

public/private datasets

mathematical modelling

ODEs / PDEs

agent-based models

stat inference, machine learning

data-driven insight

parameter fitting

cause-effect validation

forecasting

so why games?

so much data!

- (micro-?) universes of socio-economic behaviour
- multi-dimensional data to decrease proxy biases
- controlled experiments (causality detection)
- close the loop between data analysis and game design

bridge between game industry and academia

(fundamental)
research

(data & tech)
expertise

(real-world)
problem solving

an example from my time at Next Games

on Google Play and App Store

a location-based, AR game of walker-hunting and exploration

Economic behaviour
(IAPs)

Social networks
(guilds, chat)

Mobility patterns
(GPS location data)

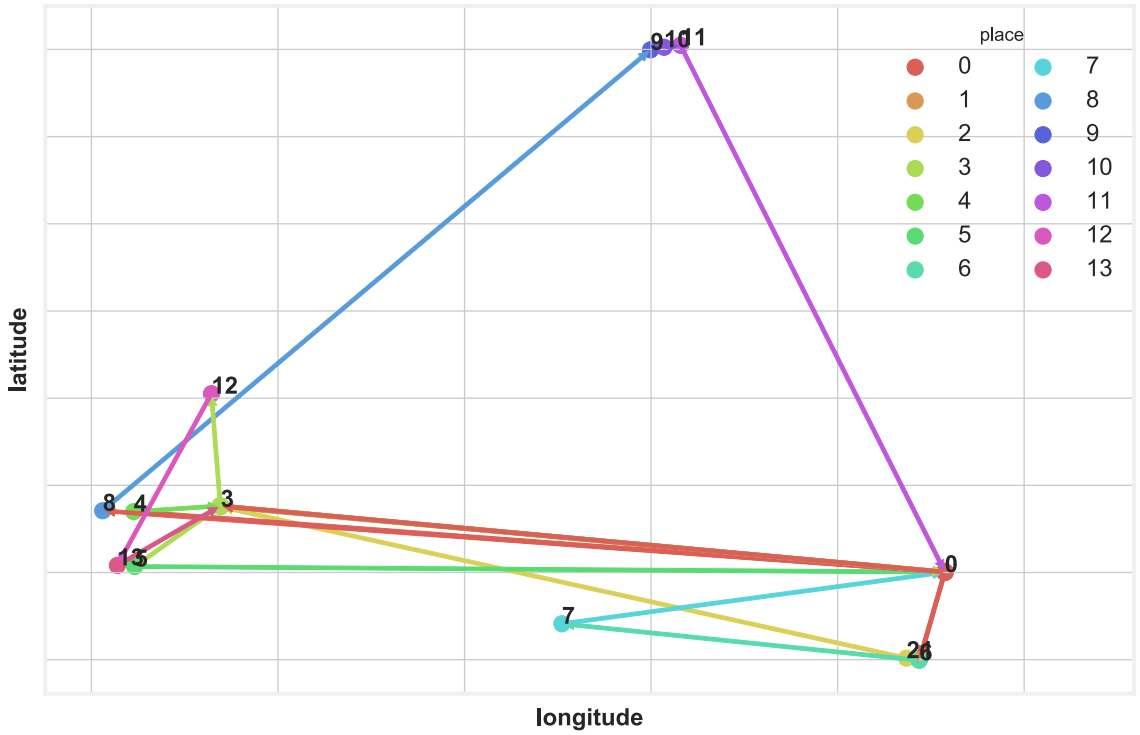
www.thewalkingdeadourworld.com
www.nextgames.com

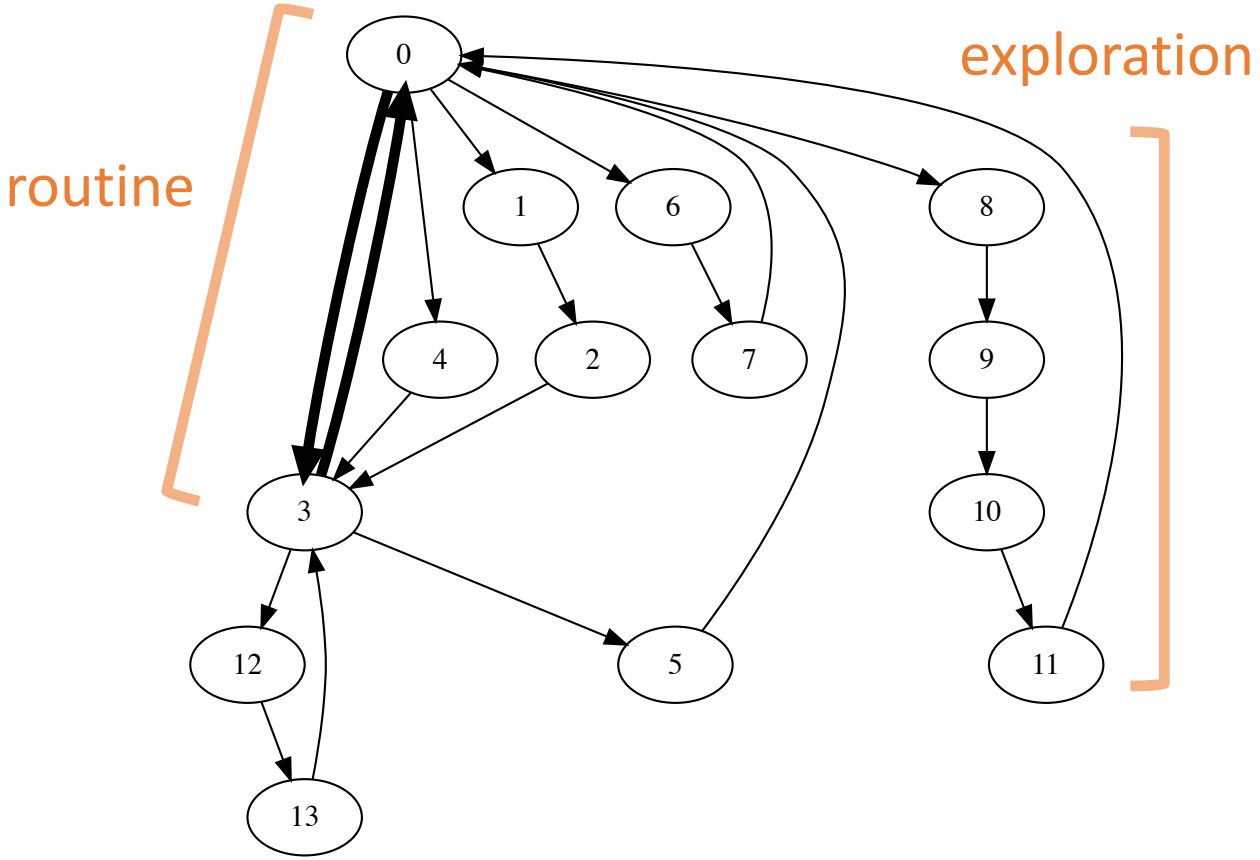
instead of asking first and getting data later…

get *ALL* data → **ask questions / explore the rest** → **implement in game / strategy**

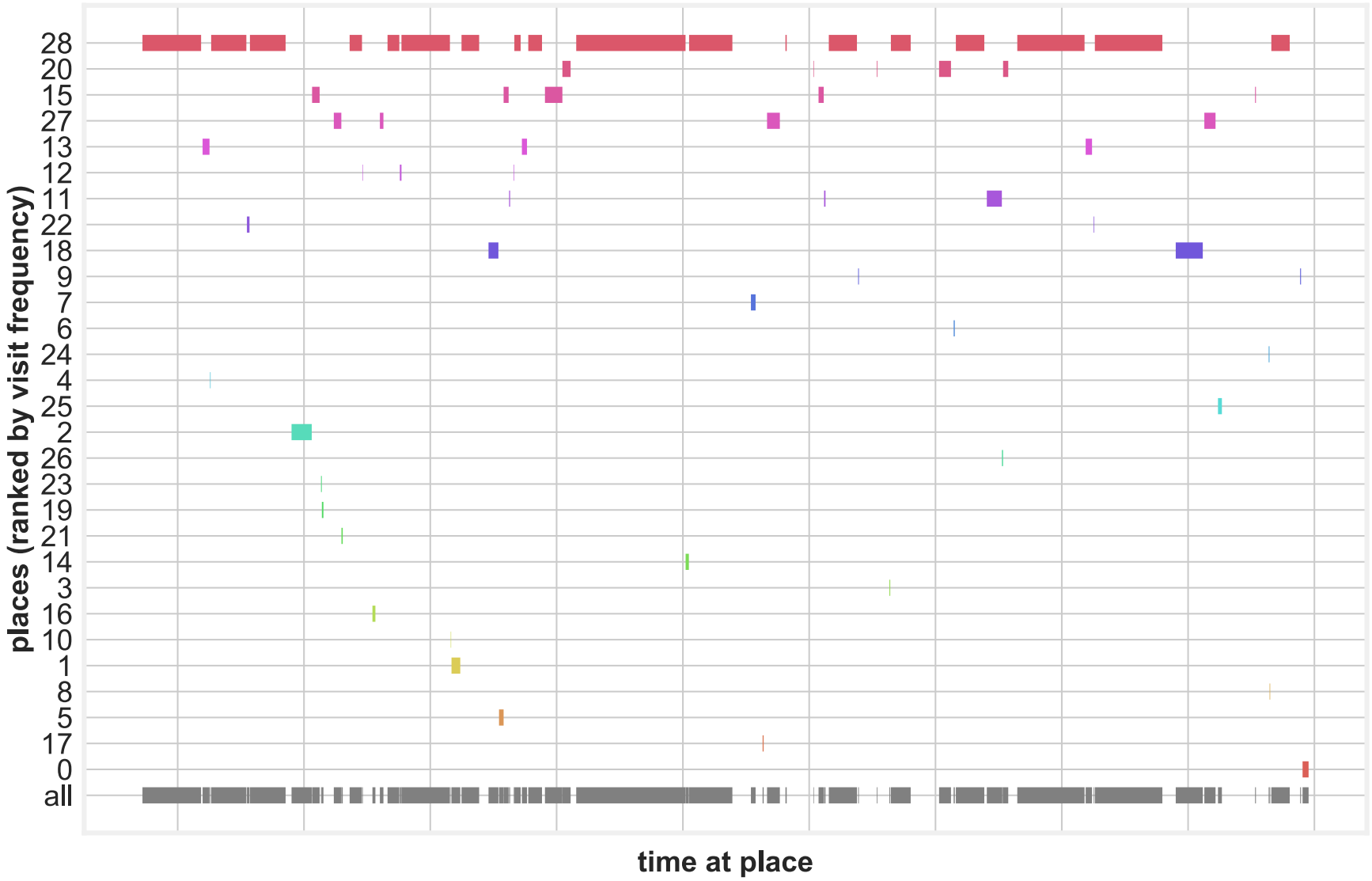
KPIs	Why is retention/conversion/… low?	Game design
Tech stats	Why is (this feature) not working?	Marketing strategies
Game activity	How do people move? Do they cheat? etc.	New features

how do people move?

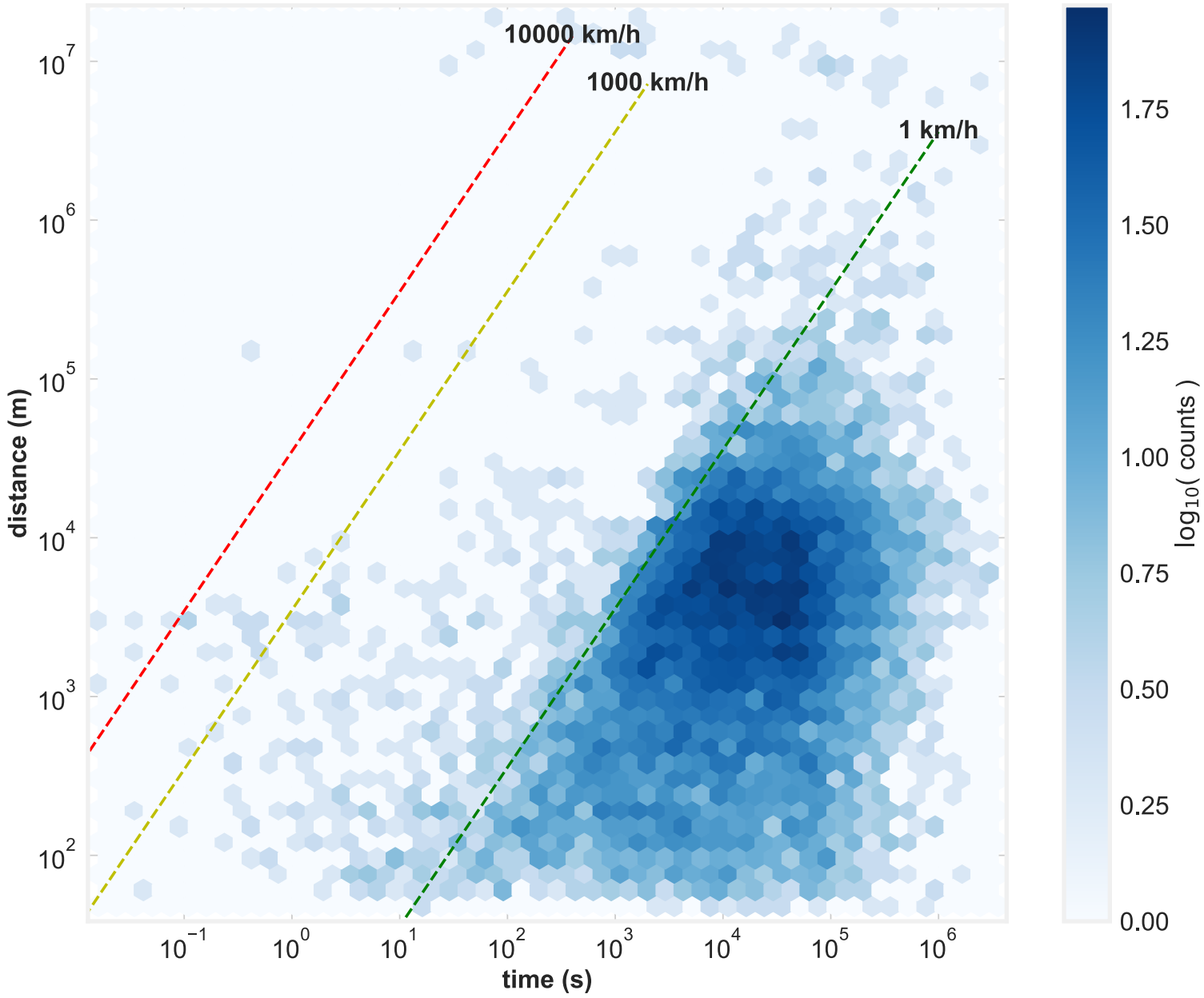




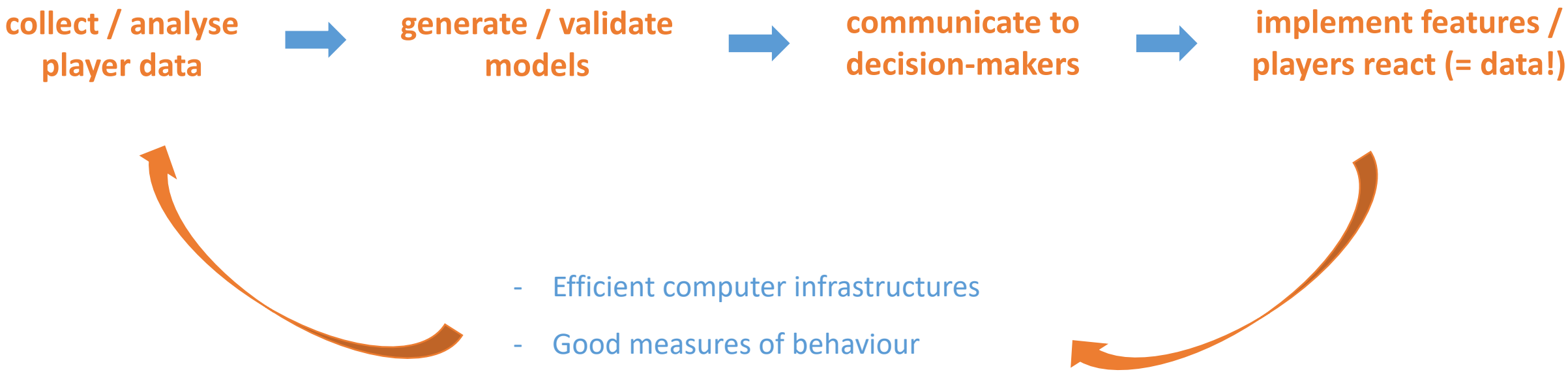
hierarchy in the most important locations



detecting ‘cheaters’ as mobility outliers



data-model infrastructures of the (modern) gaming industry



- Efficient computer infrastructures
- Good measures of behaviour
- (Semi-) automated model selection

challenges we face

- deep understanding (*science!*) vs. fast implementation (*business!*)
- changing conditions, adaptive players
- analyzed human behaviour is personal info (GDPR compliance, etc.)

what are we doing next?

Lightneer

www.lightneer.com

Let’s maximise player engagement and foster organic growth

by analysing social influence and crafting a social network of users

- **Make fun, gamified social experiments that give research data**
- **Build an ecosystem of games with a strong use base**

Thanks!

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