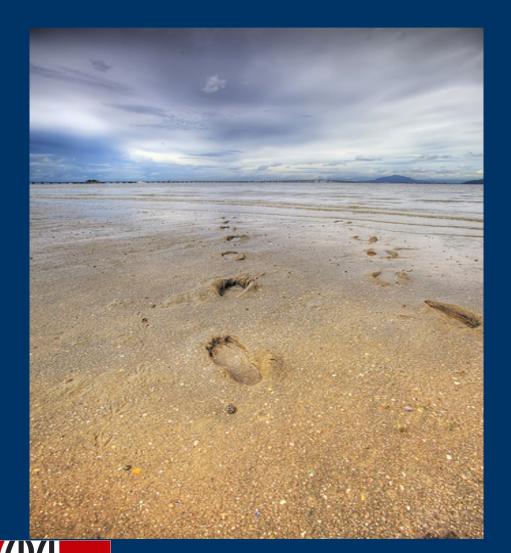
Recent research challenges in pedestrian modeling

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Motivation: why modeling pedestrians?



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- Emergency, evacuation
- Design of new facilities
- Multimodal
 platforms
- Urban congestion

• etc.



Areas of research

- Data collection
- Behavioral models
- Simulation
 environment

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Data collection

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- Questionnaires, counts
- Pedometers
- GPS, GSM
- Video
- Smartphones





Data collection: smartphones

- GSM, GPS
- Accelerometer
- WiFi
- Bluetooth
- Ambient sound
- And more...







Data collection: smartphones



- Softwares:
 - Call log
 - SMS log
 - Media player
 - Calendar





Issues



- Not travel data
- Activities, paths, not directly observed
- Poor quality
- Electrical power
- Large quantity of data
- Privacy





Areas of research

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066). (ABla,+)-[pe+pla]+pla)]. 5(a, k) . (2(a, k)). x30 5 14 (a)+µ(a)]AG(a,t) (a)(G(a,+)-[(5(a)+µ(a)]). ο<πΘ1≥π≥0 -π91≥π≥0 -14 A5+344b =5法9党? A.] we SPOVg? Lin. Och. (16(a,+)- [μα+μ6] ·-1' conSciented (Yw) on G6.(6) π>0 袋·錄-[入,(a,t)+九,(a,t)+p(a)].5(柴·裝·次,(a,t)-[o,(a)+o,(a)+p(a)] e 804+500-560.00(at)+6666666 .(c)]· (AG(a,t) . OGC + OGC - O2(a). K=M(N-KO)=N O. TA O total



Choice models



- Standard in transportation demand
- Travel models
- Driving models
- Disaggregate
- Flexible





Activity choice

- Group behavior
- Impulse stops
- Walking may be an activity







Destination choice



- Coupled with activity choice
- Large choice set
- May change dynamically





Mode choice

- Stairs
- Elevators
- Lifts







Route choice



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- No physical network
- Intermediary
 targets



Walking behavior



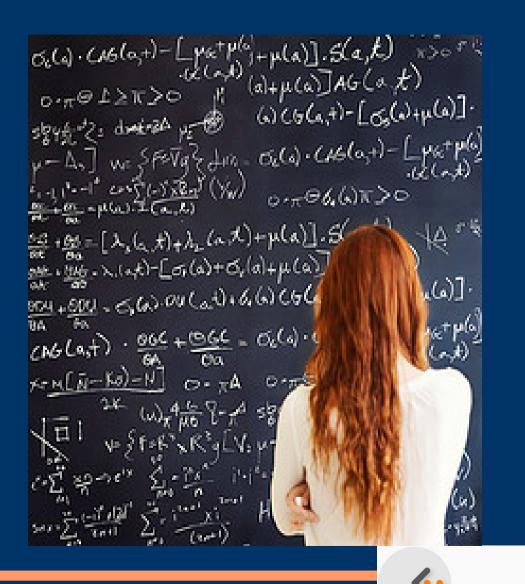
- Next step
- Speed
- Interactions
 - Group
 - Leader-follower
 - Collision avoidance





Areas of research

- Data collection
- Behavioral models
- Simulation
 environment





Simulation







Application: video tracking







Conclusion

- Modern field of research
- Complex and challenging
- Applications are many



