Introduction

Measurement & Evaluation of HCC Systems

Hello! I'm Bart!

I come from:

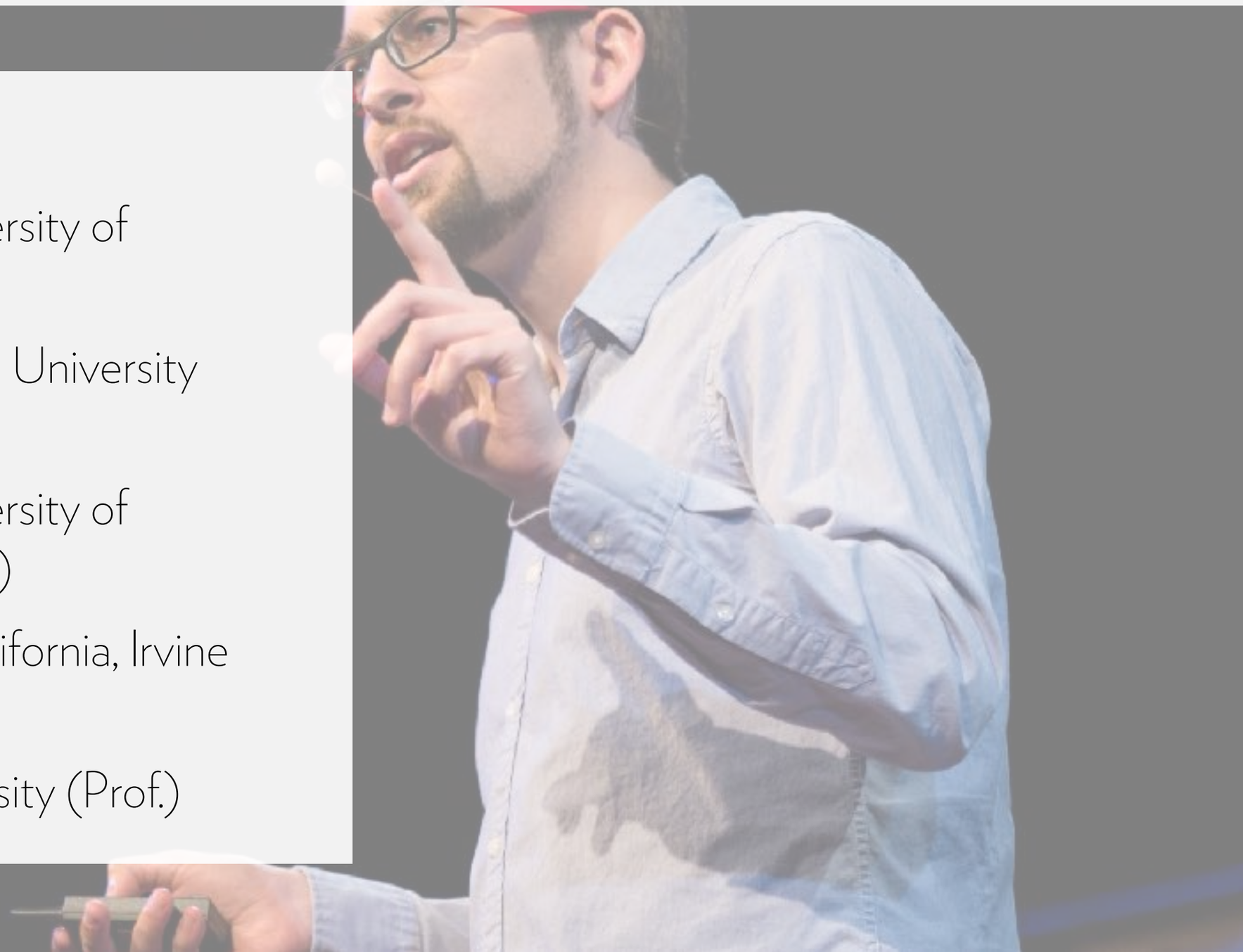
Eindhoven University of Technology (BS)

Carnegie Mellon University (MHCI)

Eindhoven University of Technology (MS)

University of California, Irvine (PhD)

Clemson University (Prof.)



Hello! I'm Bart!

BS in Innovation Sciences (Eindhoven University of Technology)

- 1/3rd science courses (CS for me)
- 1/3rd social sciences (psych, econ, business, philosophy, history)
- 1/3rd project work

Goal: build a bridge between the human and technological aspects of innovations

Project: Cognitive Modeling Tools for Usability Evaluation

Hello! I'm Bart!

M in Human-Computer Interaction (Carnegie Mellon)

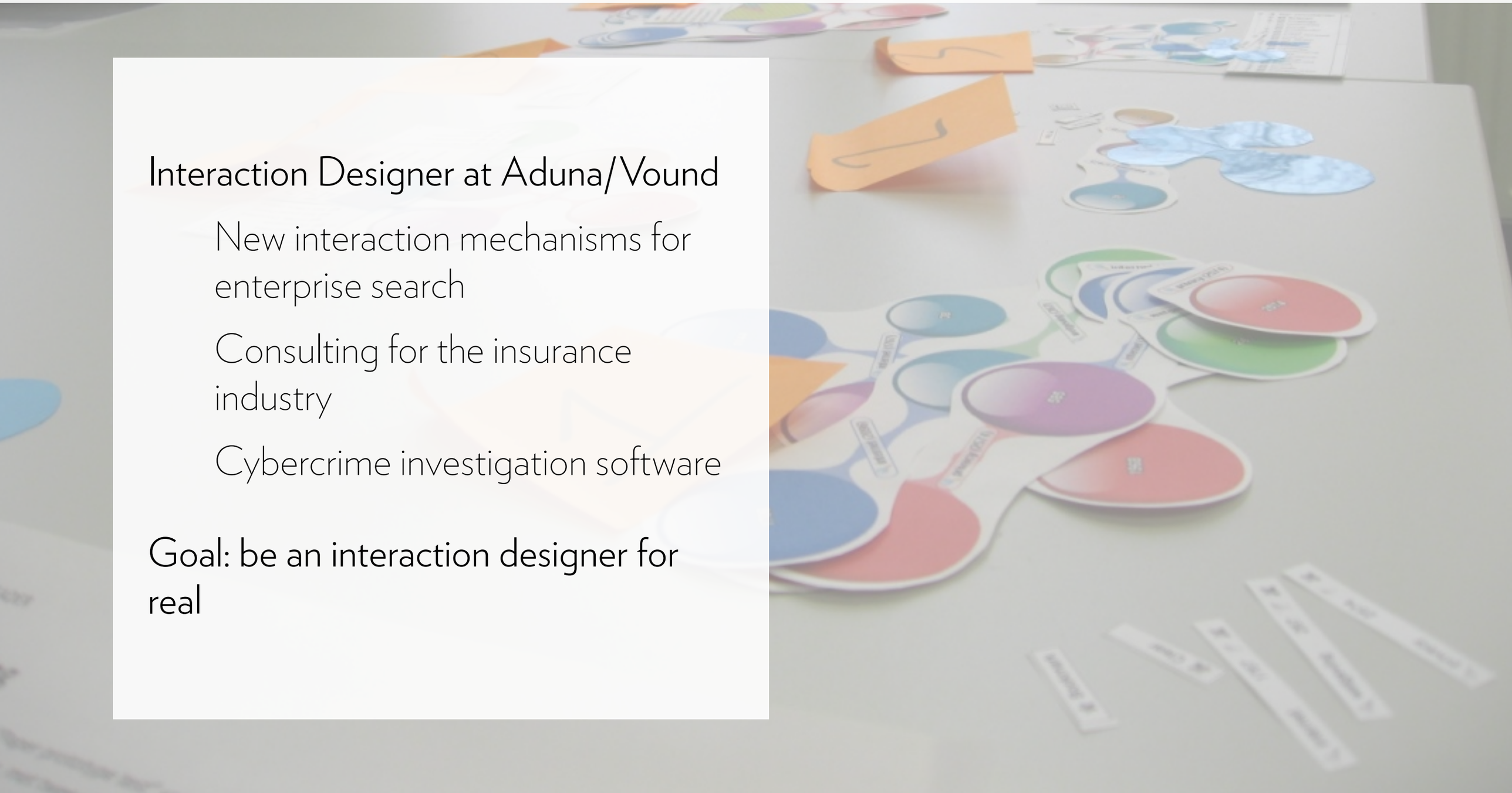
Core courses on HCI, Interaction Design, Prototyping, Evaluation

Breadth courses on Machine Learning, Cognitive Modeling, etc.

Goal: learn what it is like to be an interaction designer at Google or Microsoft

Project: A Social Event Planning Prototype for Google

Hello! I'm Bart!



Interaction Designer at Aduna/Vound

- New interaction mechanisms for enterprise search
- Consulting for the insurance industry
- Cybercrime investigation software

Goal: be an interaction designer for real

Hello! I'm Bart!

MS in Human-Technology Interaction (Eindhoven)

- Core courses on Psychology and Human Behavior
- Strong research component

Goal: become an HCI researcher

Project 1: Inferring Capabilities of Intelligent Agents from their External Traits

Project 2: A User-Adaptive Interface for an Energy-Saving Recommender System

Hello! I'm Bart!

Researcher/Teacher at Human-Technology Interaction (Eindhoven)

- Research on user-centric evaluation of recommender systems
- Taught a course called "Thinking and Deciding"

Goal: be an HCI researcher for real

Project: "Explaining the user experience of recommender systems"

Hello! I'm Bart!

PhD in Information and Computer Sciences (UC Irvine)

- Research on privacy decision-making
- Taught "Human Factors for the Web"
- (Co-)authored over 30 peer-reviewed articles
- Sponsored by NSF, Samsung, Intel, Ericsson, Google

Goal: become a professor

Project: A User-Tailored Approach to Privacy Decision Support

Hello! I'm Bart!

Associate Prof. in Human-Centered Computing (Clemson)

Research projects: recommender systems for self-actualization, user-tailored privacy, social media post translation, privacy education, racial diversity in media, equitable CS education

Goal: be a professor for real

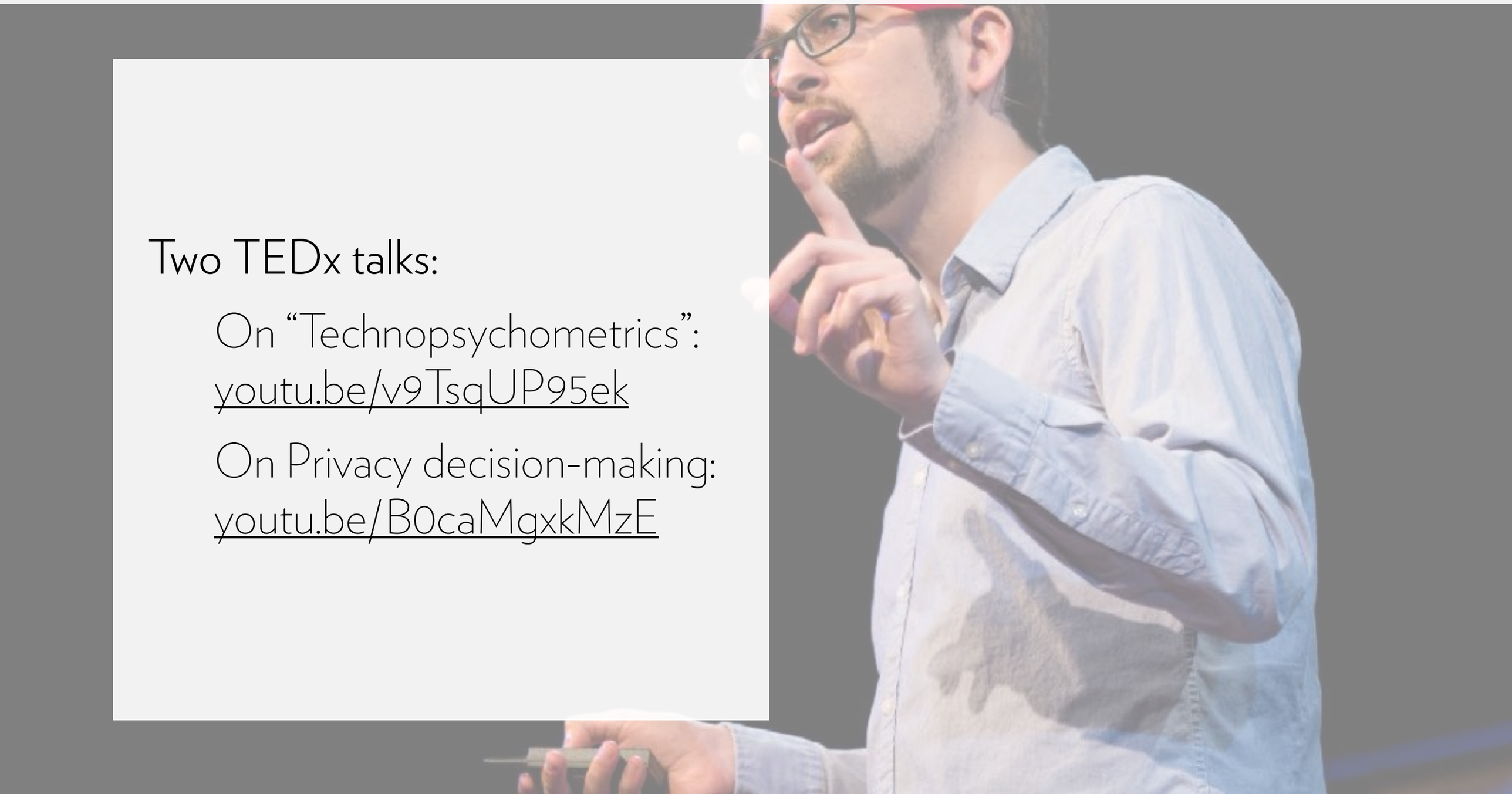
Hello! I'm Bart!

Hobbies:

- Running
- Photography
- Design
- Cycling (more of a lifestyle)

Also: taking care of Tolga and Arda!

Hello! I'm Bart!

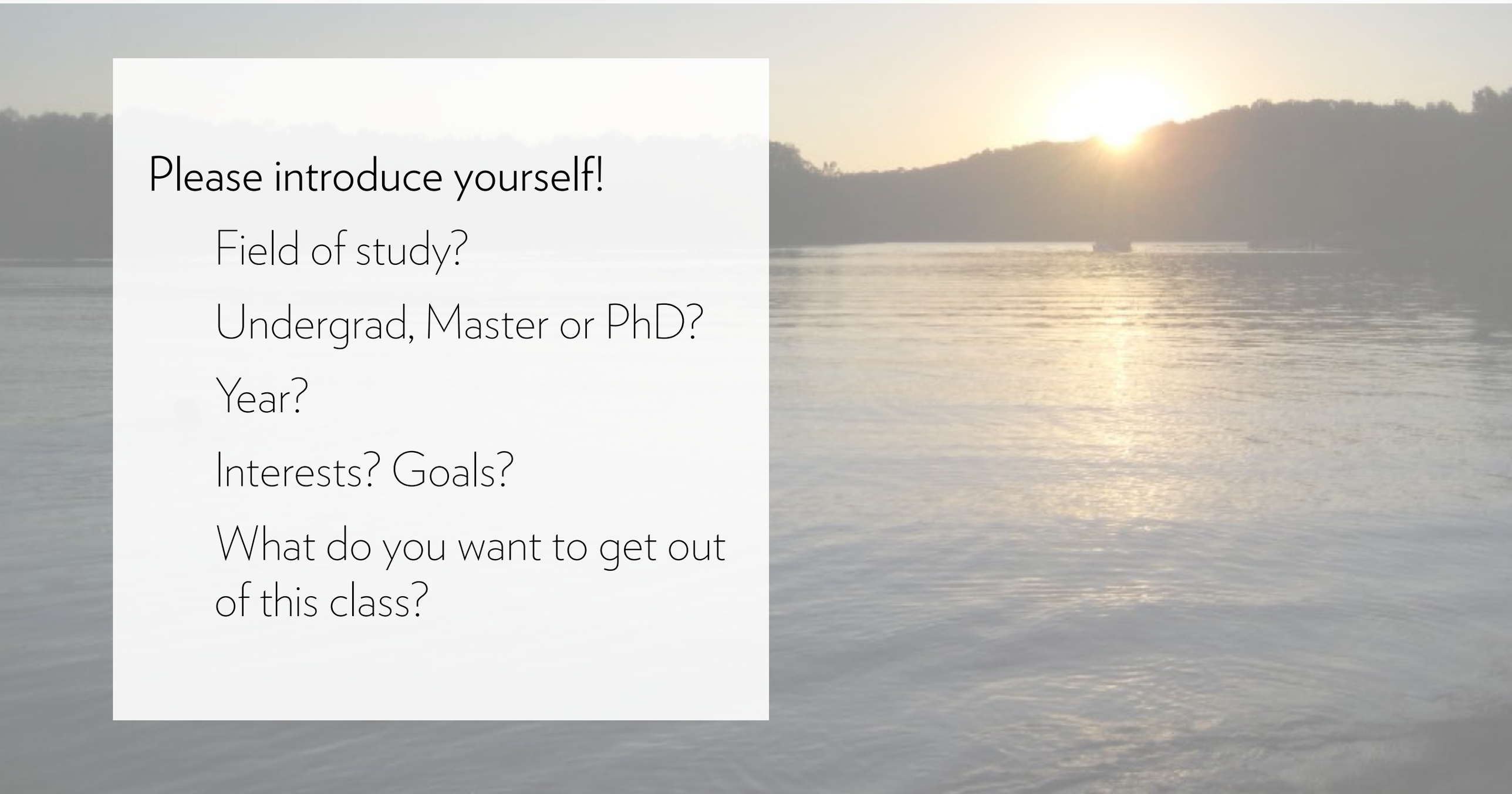


Two TEDx talks:

On "Technopsychometrics":
youtu.be/v9TsqUP95ek

On Privacy decision-making:
youtu.be/B0caMgxkMzE

So who are you?



Please introduce yourself!

Field of study?

Undergrad, Master or PhD?

Year?

Interests? Goals?

What do you want to get out of this class?

About the Class

Goals and Requirements

About the Class

This class will teach you how to scientifically evaluate computing systems

using a quantitative, user-centric approach

with state-of-the-art statistical methods

final goal: being able to conduct experiments and evaluations yourself

About the Class

Everything can be found at usabart.nl/eval

Hand in homework etc. via Canvas

About the Class

Part 1 (week 1-4)

The practice of experimental evaluation

(stuff you may have learned in Research Methods)

Readings:

Knijnenburg and Willemsen handbook chapter, two chapters from MacKenzie, first five of chapters of Field

This is the part with lots of readings, but should be familiar...

If this stuff is not familiar, this is a good time to catch up!

About the Class

Part 2 (week 5-8)

Basic statistical methods: Correlation, Regression, ANOVA, and T-test

(stuff you have forgotten from undergraduate statistics)

Readings:

Field chapters 6, 7, 9, 10 and 12

This is the foundation for the more complicated stuff

Make sure you don't fall behind!

About the Class

Part 3 (week 9-15)

Advanced methods: Non-linear and multilevel statistics

(stats for "messy" HCC variables)

Readings:

Field chapters 8, 18, 13, 14, and 19

This is where things get useful

These are the methods you will often use in your own research, so learn them well!

Advanced M&E

Psychometrics

(how to measure subjective valuations w/ questionnaires)

Learning how to do this well will give your research a huge advantage!

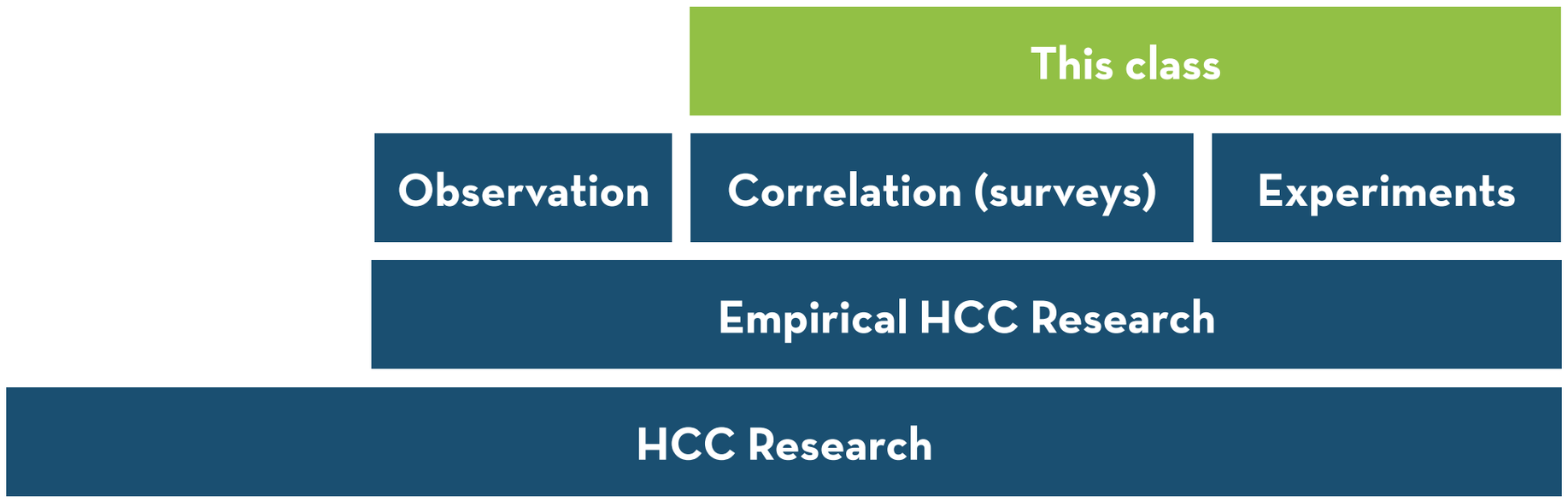
Latent and structural models

(how to evaluate structured hypotheses with subjective valuations using CFA and SEM)

Very few HCI researchers are knowledgeable about this

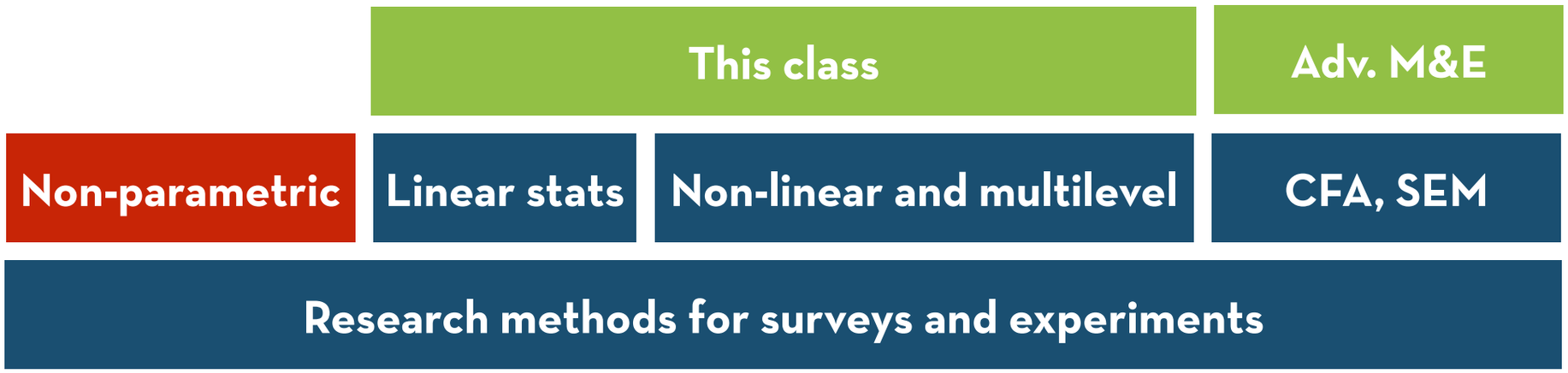
About the Class

Place within HCI:



About the Class

Place within HCI:



What I Want From You

Requirements, Rules, Tips, Etc.

Readings

Please read the assigned chapters before class

I'm gonna assume you read them (lectures will be confusing if you didn't)

You're gonna have to read them to do the homeworks anyway (better get it over with)

I know it is a lot to read each week

But especially Field's book is super weird and fun to read (I'm serious)

Homeworks

4 homeworks (each 10%):

HW 1: Experimental design, sample size, correlation, regression

HW 2: T-tests, ANOVA, factorial ANOVA

HW 3: Logistic regression and categorical data

HW 4: Repeated measures and mixed designs

Homeworks

Contents:

- Insight questions (short answer)
- Data analysis questions (should be done in R; provide code excerpts and explanation in your own words)

You are allowed (encouraged!) to discuss the assignments, but you have to write your own write-up

- (i.e. you can discuss, but not copy)

Timing: usually 2-3 weeks to complete

Midterms + Final

3 midterms, 1 final (15% each)

Contents:

- Incremental
- Similar to assignments
- Open book, open laptop (but no collaboration)

Timing: released Mon after class, due Wed before class

- Should take roughy 2 hours to complete

Academic integrity

Be nice

Don’t cheat

Outside the class...

Feel free to come to me with statistics questions regarding your own research!

I like doing this stuff

I am usually consulting on ~20 different projects at a time