



 **PRIPARE**

PReparing Industry to PPrivacy-by-design by  
supporting its AApplication in REsearch

# Privacy in Computer Science Education

## What I miss in Engineers' know-how

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# My experience engineering privacy

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- Academic background on privacy
  - since 2012 working for industry at Gradient (Spain)
  - since 2014: Security and Privacy lead
- Gradient's goal: transfer of knowledge to industry
  - we bring state of the art technologies to the market
- It is difficult to know what the client really wants with respect to privacy
  - Customers find it difficult to express their privacy preferences
  - They do not see themselves as a threat
    - Claudia Diaz, Omer Tene, and Seda F. Gurses. *Hero or Villain: The Data Controller in Privacy Law and Technologies*. Ohio State Law Journal.
  - Privacy-preserving solutions are difficult to understand



# Everyday problems for the engineer

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- Data protection and privacy
  - What should be provided? Is there a difference?
  - Little legal background
  - Little knowledge on attacks, e.g. de-anonymization attacks)
- Advanced crypto and PETs are not well understood
  - What is out there?
  - When can I use it?
  - Can I combine technologies?
- How do I measure privacy?
  - I designed a system... is it good?

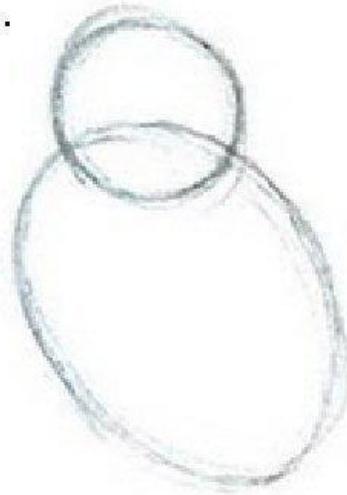


# Let's implement PETs!

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How to draw an owl

1.



1. Draw some circles

2.



2. Draw the rest of the owl

Jan Schaumann (Twitter )  
Real World Crypto 2015



# Conclusions

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- Engineers need better training in privacy. Need to...
  - Understand the privacy concept and its relation to Data Protection
  - Understand privacy adversaries
  - Understand how to measure privacy
  - Understand PETs and crypto
    - And they need help from researchers for implementation!
- But also non-engineers need better training
  - Express privacy preferences
  - Assess that solution fits their needs
- (Note: I could have given a similar talk for security...)



**PR**eparing **I**ndustry to **P**rivacy-by-design by supporting its **A**pplication in **RE**search

Website: [www.pripareproject.eu](http://www.pripareproject.eu)

Thank you for your attention



**Empo** Wering **pr**ivacy and **securi**Ty in **clouD** **envirOnMents**

