

Big Data in perinatology and health data protection for infants

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About me



Louis Abraham

- ▶ Education: École polytechnique, ETH Zurich
- ▶ Experience:
 - ▶ Quant @ BNP Paribas
 - ▶ Deep learning @ EHESS / ENS Ulm
 - ▶ Data protection @ Qwant Care

What is cryptography?

- ▶ Cryptography is the art (and sometimes science) of secret writing
- ▶ also guarantees other properties like authentication and authenticity
- ▶ much of our trust in these systems is based on the belief that nobody broke them *until now*

Vocabulary checkpoint

- ▶ Encryption and decryption algorithm
- ▶ Plaintext
- ▶ Key
- ▶ Ciphertext

About keys

Key: input to a cryptographic algorithm used to obtain confidentiality, integrity, authenticity or other property over some data

The security of modern cryptosystems relies on keys.

The million dollar (or more) question

Who has the key?

What happened in Great Britain in 2014

The Telegraph

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Millions of NHS records sold to insurance firms

Millions of patient records were sold to insurance firms who used it to set their critical illness premiums in a series of 'unacceptable lapses', an independent review finds

source:

<https://www.telegraph.co.uk/news/health/news/10906390/Millions-of-NHS-records-sold-to-insurance-firms.html>

- ▶ *hospital records covering 47 million patients had been sold to one organisation for insurance purposes*
- ▶ *patient information was sold to 178 private firms on 588 occasions between 2005 and 2012*

Le Dossier Médical Partagé

PATIENT

PROFESSIONNEL



VERSION ACCESSIBLE

MON DMP

DMP LE DOSSIER MÉDICAL PARTAGÉ



CRÉEZ VOTRE CARNET DE
SANTÉ NUMÉRIQUE

CRÉEZ VOTRE DMP

Le Dossier Médical Partagé

Quid de la sécurité des données ? *«La connexion au DMP est hautement sécurisée, assure l'assurance maladie. Les professionnels de santé ne peuvent y accéder qu'en étant munis de leur carte professionnelle. Quant au patient, il reçoit un code à usage unique par SMS pour s'y connecter.»* De plus, les DMP sont conservés *«par un hébergeur de données de santé ayant reçu un agrément du ministère en charge de la Santé»*. Enfin, *«les données qui y sont stockées sont cryptées, à partir d'une clé propre à chaque assuré. Ces données ne peuvent être diffusées ou exploitées à des fins commerciales, d'études ou autre»*.

source: https://www.liberation.fr/france/2018/11/06/le-dossier-medical-partage-se-lance-apres-une-longue-incubation_1690338

Evolution of AI

- ▶ AI increasingly used in insurance
- ▶ Who knows how AI will be used tomorrow?
- ▶ Why take the risk for your children?
- ▶ Protect your and their data