

# Artificial Intelligence and Privacy



**Suraiya Khan**

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# Bio



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SESAME Street  
Disney  
Warner Bros

# Bio



**University  
of Victoria**

**Electrical &  
Computer  
Engineering**



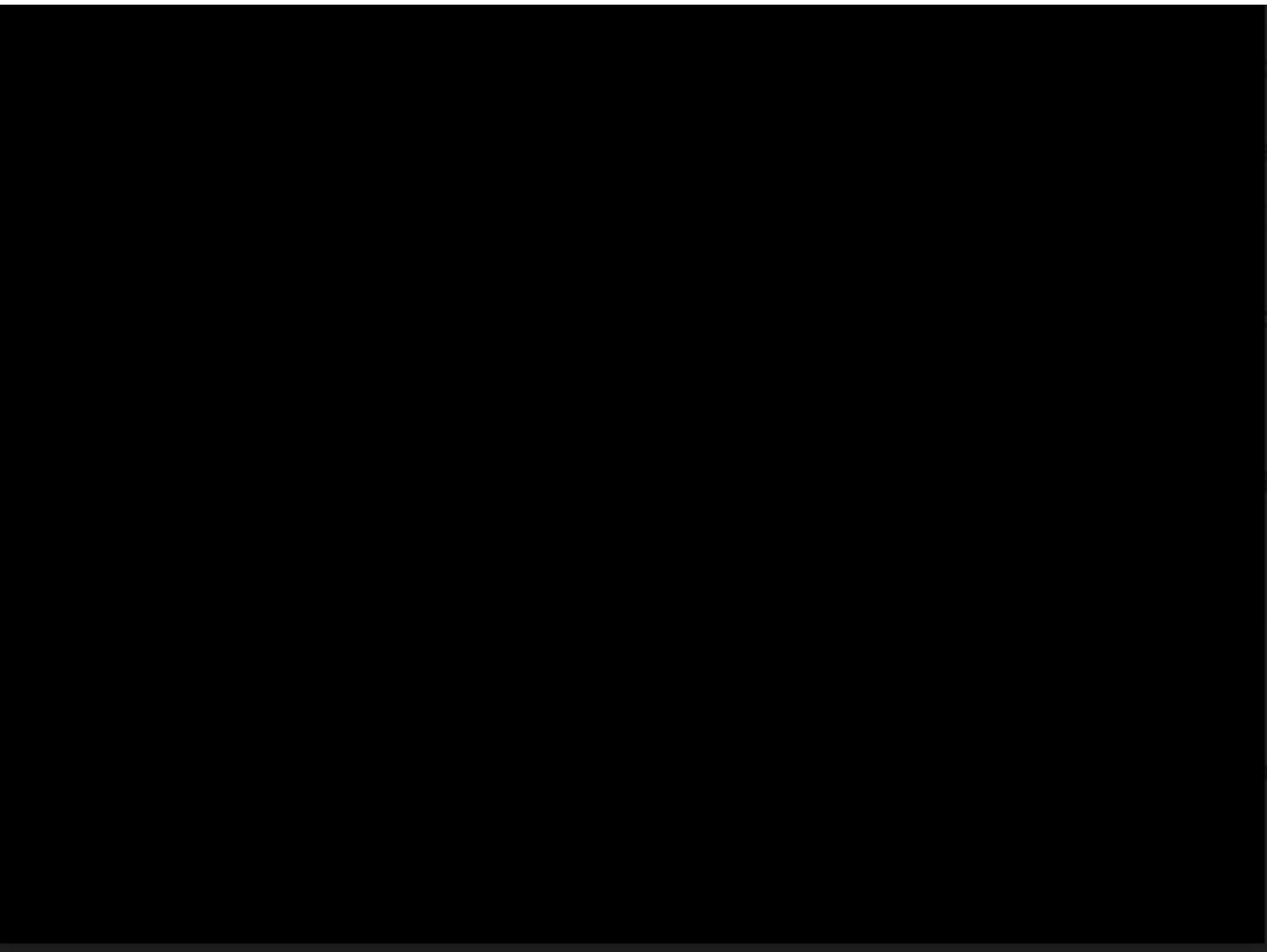
**School of Computer Science**  
*College of Engineering*

*The UNIVERSITY of OKLAHOMA*



**Bangladesh  
University of  
Engineering and  
Technology**





<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4465351/>

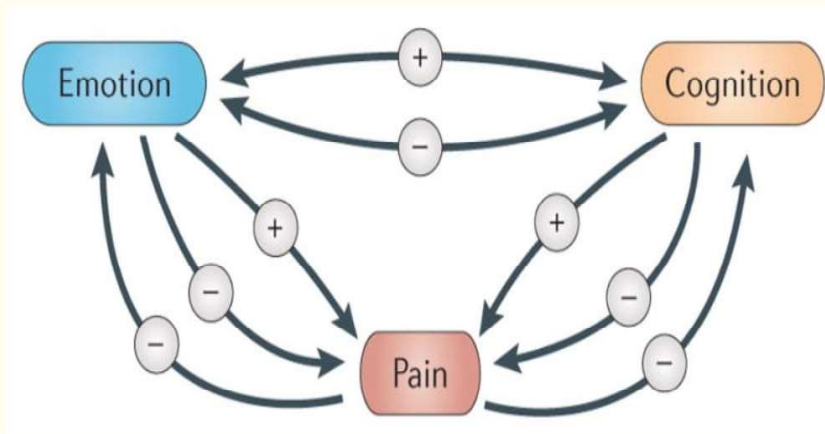


Figure 1

Feedback loops between pain, emotions and cognition

Cognitive and emotional control of pain and its disruption in chronic pain  
M. Catherine Bushnell, Marta Čeko, and Lucie A. Low

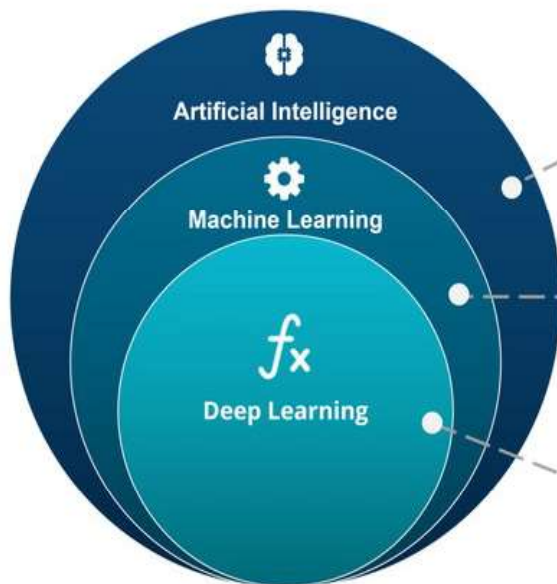


OrpheusKey





Statistics  
Calculus  
Linear Algebra  
Numerical Analysis & Optimization



**ARTIFICIAL INTELLIGENCE**

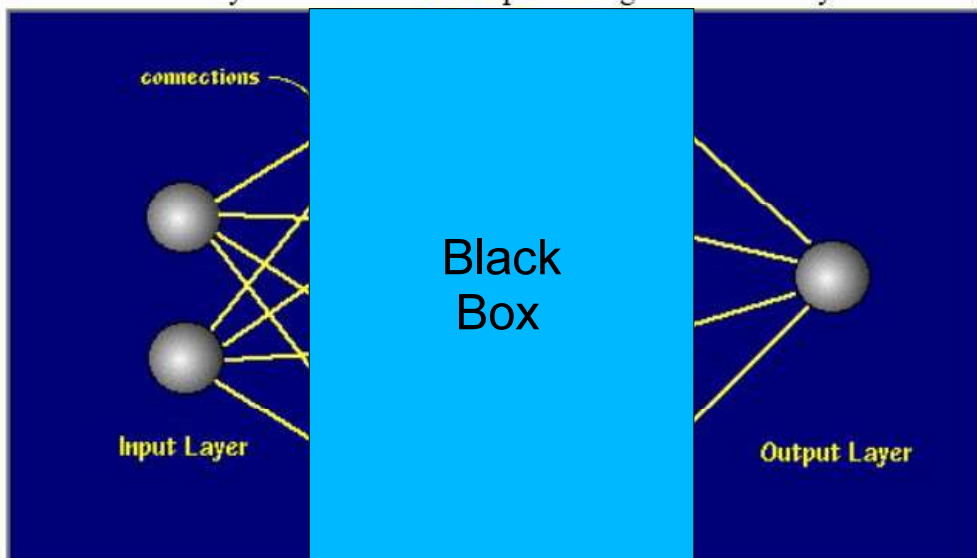
A technique which enables machines to mimic human behaviour

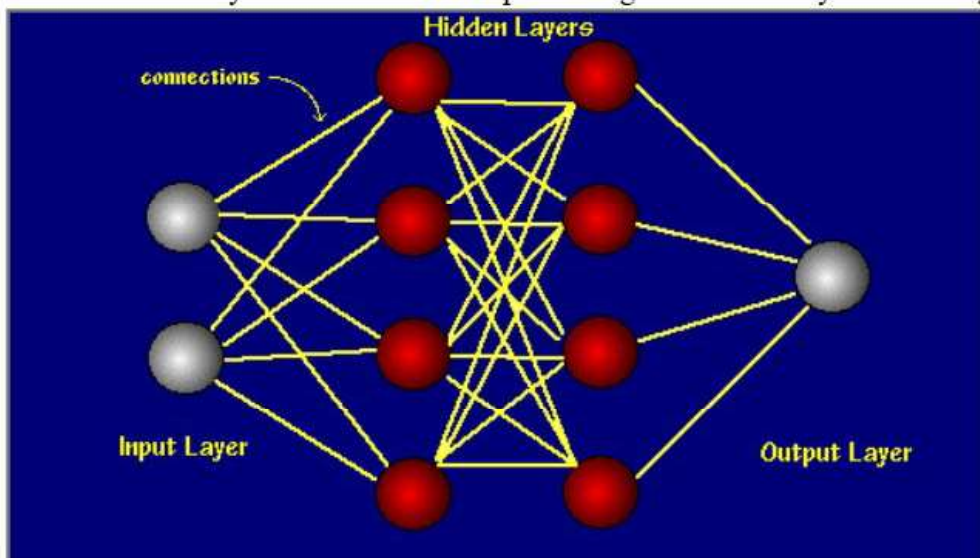
**MACHINE LEARNING**

Subset of AI technique which use statistical methods to enable machines to improve with experience

**DEEP LEARNING**

Subset of ML which make the computation of multi-layer neural network feasible





Grover



**Machine Learning Algorithms**

**Prediction Model**



**Not Grover**



Copyright: SESAME Street, WB, Disney

## Medical Records

| SSN | Name | 3 digit postal code | Family doctor | Gender | Pressure | ... | Sugar |
|-----|------|---------------------|---------------|--------|----------|-----|-------|
|     |      |                     |               |        |          |     |       |

| 3 digit postal code | Family doctor | Gender | Pressure | ... | Sugar |
|---------------------|---------------|--------|----------|-----|-------|
|                     |               |        |          |     |       |

## *Data de-identification/ Anonymization*

[https://www.cancerresearchuk.org/sites/default/files/thf\\_datareport\\_aw\\_web.pdf](https://www.cancerresearchuk.org/sites/default/files/thf_datareport_aw_web.pdf)

**(Statistical Disclosure Control, Differential Privacy)**

<https://www.semanticscholar.org/paper/Anonymizing-NYC-Taxi-Data%3A-Does-It-Matter-Douriez-Do-raiswamy/5f1d0d3aed9d34f7048a1dfa4b2986bcdbf5de48>

**(New York City Taxi Cab data anonymity issue)**

**Not Enough**

[https://www.linkedin.com/posts/matthewslyman\\_entrepreneurship-inspiration-personaldevelopment-activity-6592745279202619393-7dib](https://www.linkedin.com/posts/matthewslyman_entrepreneurship-inspiration-personaldevelopment-activity-6592745279202619393-7dib)

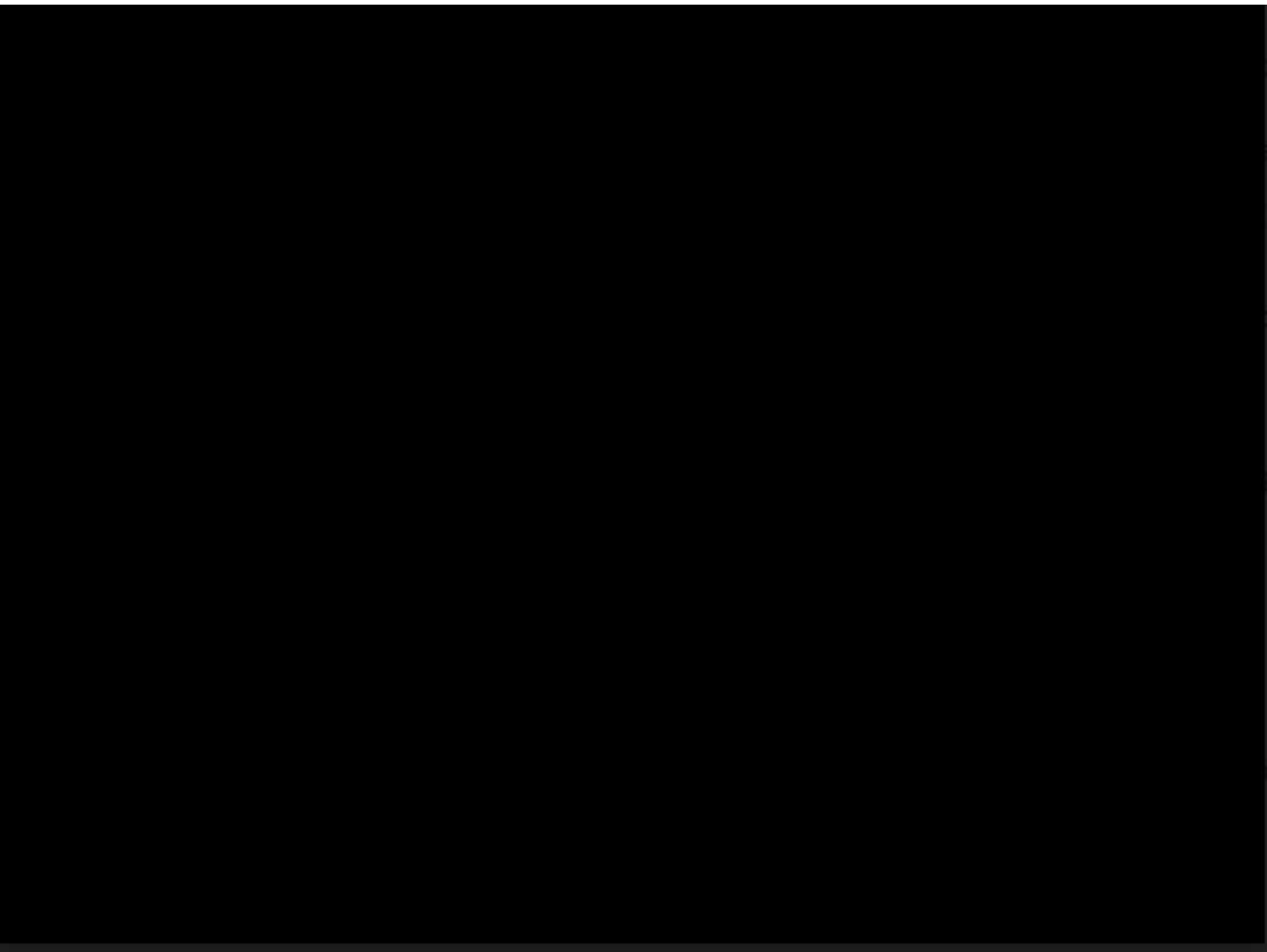
IF YOU DON'T GIVE UP,  
YOU STILL HAVE A CHANCE.

GIVING UP IS THE

GREATEST  
FAILURE



- Jack Ma







“And, when you want  
something,

**ALL THE UNIVERSE**

*conspires in helping you to  
achieve it.”*

*The Alchemist,*  
**PAULO COELHO**

\*Cite source

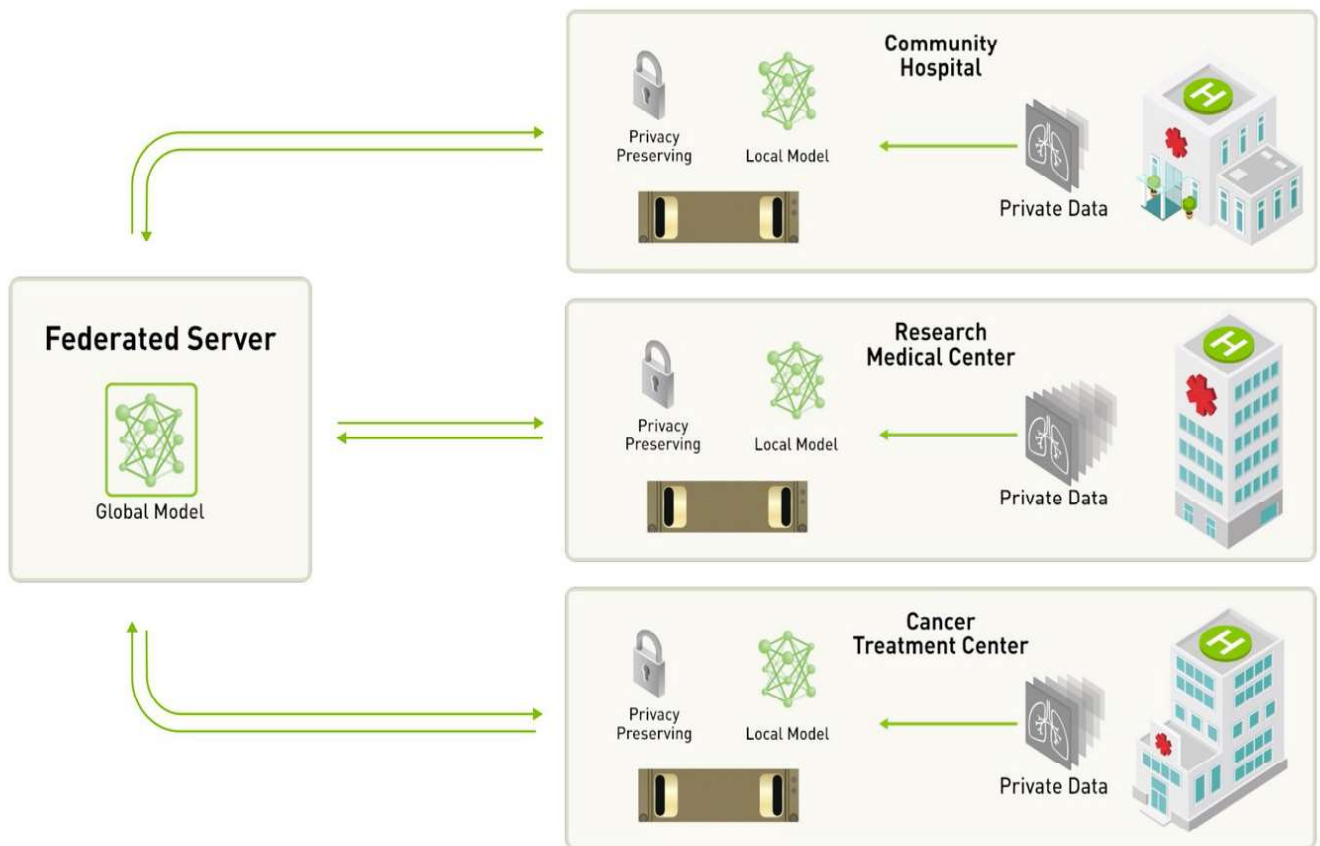
*<https://github.com/OpenMined>*



## **BUILDING SAFE ARTIFICIAL INTELLIGENCE**

OpenMined is an open-source community focused on researching, developing, and promoting tools for secure, privacy-preserving, value-aligned artificial intelligence.

<https://blogs.nvidia.com/blog/2019/10/13/what-is-federated-learning/>



“Constraints make us creative”

“Your playing small does not serve the world. ...And as we let our own light shine, we unconsciously give other people permission to do the same. As we are liberated from our own fear, our presence automatically liberates others.”

- **Marianne Williamson**

# *Q & A*