

# Secure and Private AI (<https://classroom.udacity.com/courses/ud185>)

## About this Course

What's the earliest we can predict cancer survival rates, and what schools do the best job of educating children? You can only answer these questions with very rare access to private and personal data, but access to this personal data requires that you master methods for the principled protection of user privacy. While not all privacy use cases have been solved, the last few years have seen great strides in privacy-preserving technologies.

This free course will introduce you to three cutting-edge technologies for privacy-preserving AI:

- Federated Learning
- Differential Privacy
- Encrypted Computation.

You will learn how to use the newest privacy-preserving technologies, such as OpenMined's PySyft. PySyft extends Deep Learning tools—such as PyTorch—with the cryptographic and distributed technologies necessary to **safely and securely train AI models on distributed private data.**

We encourage you to enter the **Secure and Private AI Scholarship Challenge from Facebook** to both take the course and have a chance to win a scholarship for the Deep Learning or Computer Vision Nanodegree programs.

<https://www.openmined.org/>

<https://iamtrask.github.io/2017/03/17/safe-ai/>

<https://medium.com/udacity/introducing-udacitys-secure-private-ai-course-fe20bfa3b0ff>



UNIVERSITY OF  
MARYLAND

08/02/2020

Peter Lorenz

has successfully completed

Hardware Security

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Gang Qu, Professor  
Director, Maryland Embedded Systems and Hardware Security Lab  
Electrical and Computer Engineering Department  
University of Maryland, College Park

COURSE  
CERTIFICATE



Verify at [coursera.org/verify/SGGK4VHG9VNB](https://coursera.org/verify/SGGK4VHG9VNB)

Coursera has confirmed the identity of this individual and  
their participation in the course.



UNIVERSITY OF  
MARYLAND

08/03/2020

Peter Lorenz

has successfully completed

Cryptography

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Jonathan Katz, PhD  
Professor  
Department of Computer Science  
University of Maryland

COURSE  
CERTIFICATE



Verify at [coursera.org/verify/W5T9NRFS3KWR](https://coursera.org/verify/W5T9NRFS3KWR)

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their participation in the course.



UNIVERSITY OF  
MARYLAND

08/02/2020

Peter Lorenz

has successfully completed

Usable Security

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Jennifer Golbeck, Ph.D.  
College of Information Studies  
University of Maryland

COURSE  
CERTIFICATE



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their participation in the course.





UNIVERSITY OF  
MARYLAND

08/03/2020

Peter Lorenz

has successfully completed

Software Security

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Professor Michael Hicks  
Department of Computer Science  
and the Maryland Cybersecurity Center (MC2)  
University of Maryland, College Park

COURSE  
CERTIFICATE



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# Stanford | ONLINE

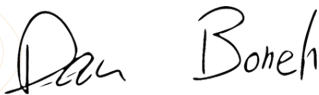
05/12/2020

Peter Lorenz

has successfully completed

Cryptography I

an online non-credit course authorized by Stanford University and offered through Coursera



Dan Boneh  
Professor of Computer Science  
Stanford University

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4 Courses

Cryptography and Information Theory

Symmetric Cryptography

Asymmetric Cryptography and Key Management

Cryptographic Hash and Integrity Protection



05/18/2020

**Peter Lorenz**

has successfully completed the online, non-credit Specialization

## Applied Cryptography

This specialization is intended for the learners interested in or already pursuing a career in computer security or other cybersecurity-related fields. Through four courses, the learners will cover the security of information systems, information entropy, classical cryptographic algorithms, symmetric cryptography, asymmetric/public-key cryptography, hash functions, message authentication codes, digital signatures, key management and distribution, and other fundamental cryptographic primitives and protocols.

A-25

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

Verify this certificate at:  
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4 Courses

Introduction to Self-Driving Cars

State Estimation and  
Localization for Self-Driving  
Cars

Visual Perception for Self-  
Driving Cars

Motion Planning for Self-Driving  
Cars



05/09/2020

**Peter Lorenz**

has successfully completed the online, non-credit Specialization

## Self-Driving Cars

This Specialization gives you a comprehensive understanding of state-of-the-art engineering practices used in the self-driving car industry. By interacting with real data sets from an autonomous vehicle (AV), you'll implement methods for static and dynamic object detection, localization and mapping, behaviour and maneuver planning, and vehicle control — all through hands-on projects using the open source simulator CARLA. You'll learn from a highly realistic driving environment that features 3D pedestrian modeling and environmental conditions. When you complete the Specialization successfully, you'll be able to build your own self-driving software stack and be ready to apply for jobs in the autonomous vehicle industry.

Associate Professor,  
Aerospace Studies  
Director, Toronto  
Robotics and Artificial  
Intelligence Laboratory

Assistant Professor,  
Aerospace Studies  
Director, Space &  
Terrestrial Autonomous  
Robotic Systems  
Laboratory

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

Verify this certificate at:  
[coursera.org/verify/specialization/QYGZW92M6YGM](https://coursera.org/verify/specialization/QYGZW92M6YGM)



**Result card for:** Peter Lorenz  
**Organisation name:** Graz University of Technology  
**Test title:** Oxford Online Placement Test  
**Date test taken:** 20/02/2018

**Results:**

**Oxford Online Placement Test**

Score	Time taken	CEF
107	00:52	C2

**Use of English:**

Score	Time taken	Use of English
96	00:15	C1

**Listening:**

Score	Time taken	Listening
119	00:37	C2+

The statistic shows up my programming skills in summer term 2016 in the course "Operating Systems" at the IAIK – Institute of Applied Information Processing and Communications. The programming languages are mainly C, C++ and Assembler.



PBSOLUTION

55 East Tianlin road,  
Xu Hui district, Shanghai

3rd February, 2015

Peter is a highly-motivated software engineer who has proficient developing and designing skills, all this proving extremely beneficial to our company when developing our new website in a very professional way and catalogs designing. Peter is always took a calm, creative and logical to problem-solving, which was particularly useful to give our marketing strategies and organization business parties a western touch. It was a great pleasure to work with Peter in PBSOLUTION for 2 month internship and I wish his continued success with his career.

Will Fan,  
Marketing Manager

