



NANODEGREE PROGRAM



Robotics Software Engineer

CERTIFICATE OF COMPLETION

Awarded to

Ibad Rather

A handwritten signature in black ink that reads "Sebastian Thrun".

SEBASTIAN THRUN

Founder, Udacity

June 28, 2021

Udacity has confirmed the participation of this individual in this program. Confirm program completion at confirm.udacity.com/PPG5APCA



4 Courses

Python Essentials for MLOps
DevOps, DataOps, MLOps
MLOps Platforms: Amazon SageMaker and Azure ML
MLOps Tools: MLflow and Hugging Face



Dec 12, 2023

Ibad Rather

has successfully completed the online, non-credit Specialization

MLOps | Machine Learning Operations

The student has successfully completed the Specialization, laying a strong foundation in Python fundamentals, MLOps principles, data management, and the deployment of machine learning models in production environments. The student acquired hands-on experience with Amazon Sagemaker, AWS, Azure, MLflow, and Hugging Face, developing their ability to create end-to-end ML solutions, pipelines, and APIs. The student has also learned to: apply exploratory data analysis techniques; use AI pair programming and GitHub Copilot; train, optimize, and deploy ML models on Amazon SageMaker and Azure ML; design full MLOps pipelines with MLflow, managing projects, models, and tracking system features; and deploy Large Language Models and containerized models using the ONNX format with Hugging Face.

Noah Gift
Annelise

Noah Gift, Executive in Residence in the Duke Social Science Research Institute

Alfredo Deza, Adjunct Assistant Professor in the Pratt School of Engineering

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:
<https://coursera.org/verify/specialization/RT33WEL4FBZ3>



Apr 14, 2019

Ibad Rather

has successfully completed

Programming for Everybody (Getting Started with Python)

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

A handwritten signature in black ink that appears to read "Charles Severance".

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:
<https://coursera.org/verify/2KEKZJU93W4Y>

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



Mar 2, 2023

Ibad Rather

has successfully completed

Machine Learning Data Lifecycle in Production

an online non-credit course authorized by DeepLearning.AI and offered through Coursera

A handwritten signature in black ink that appears to read "Robert Crowe".

Robert Crowe
TensorFlow Developer Engineer, Google

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/4QYMUUA4RYJQT>

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



Apr 18, 2019

Ibad Rather

has successfully completed

Python Data Structures

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

A handwritten signature in black ink that appears to read "Charles Severance".

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



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<https://coursera.org/verify/5ARF7G2NFnQU>

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



Jan 22, 2020

Ibad Rather

has successfully completed

Tools for Data Science

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



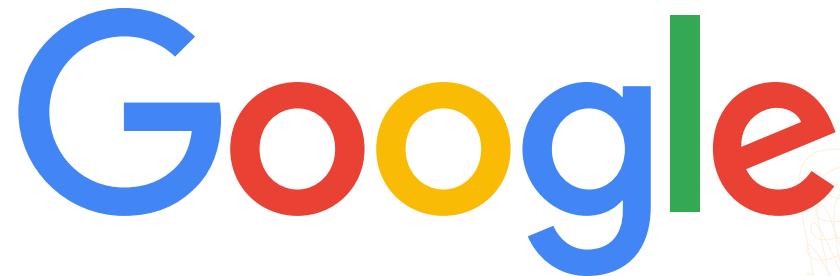
Maureen McElaney
Romeo Kienzler
Svetlana Levitan

COURSE CERTIFICATE



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



Mar 16, 2021

Ibad Rather

has successfully completed

Crash Course on Python

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

Google

Google

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/6YV5W6LPULU>

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



Georgia Institute of Technology®

Apr 5, 2019

Ibad Rather

has successfully completed

Machine Design Part I

an online non-credit course authorized by Georgia Institute of Technology and offered through Coursera



Dr. Kathryn Wingate
Academic Professional
Woodruff School of Mechanical Engineering

COURSE
CERTIFICATE



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



Oct 21, 2019

Ibad Rather

has successfully completed

Machine Learning with Python

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

Saeed A. gSantarcangelo

Saeed Aghabozorgi
Sr. Data Scientist
IBM

Joseph Santarcangelo
Senior Data Scientist
IBM

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/8TSW2YPUQV8X>

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



Feb 6, 2021

Ibad Rather

has successfully completed

The Arduino Platform and C Programming

an online non-credit course authorized by University of California, Irvine and offered through Coursera

A handwritten signature in black ink that reads "Ian Harris".

Ian Harris
Professor
Department of Computer Science

COURSE
CERTIFICATE



Verify at:
<https://coursera.org/verify/8ZX943MAX4MT>

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



Oct 11, 2019

Ibad Rather

has successfully completed

Building AI Applications with Watson APIs

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

Antonio Cangiano

Antonio Cangiano
Software Developer and Technical Evangelist
IBM Digital Business Group

Tanmay Bakshi

Tanmay Bakshi
AI Evangelist & Watson Developer

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/9PHZPTMTJK9N>

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



Oct 5, 2019

Ibad Rather

has successfully completed

Getting Started with AI using IBM Watson

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

Rav Ahuja
Global Program Director,
Skills Network

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/27VF2ED8CP5X>

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



May 6, 2019

Ibad Rather

has successfully completed

Data Visualization with Python

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

Saishruthi

Saishruthi Swaminathan
Data Scientist
IBM CODAIT

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/28BY9UYBSQGC>

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



Oct 4, 2019

Ibad Rather

has successfully completed

Introduction to Artificial Intelligence (AI)

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

Rav Ahuja
Global Program Director,
Skills Network

COURSE CERTIFICATE



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<https://coursera.org/verify/84H4VJUT93VV>

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



Mar 1, 2023

Ibad Rather

has successfully completed

Introduction to Machine Learning in Production

an online non-credit course authorized by DeepLearning.AI and offered through Coursera

A handwritten signature in blue ink that appears to read "Andrew Ng".

Andrew Ng
Founder, DeepLearning.AI
Co-founder, Coursera

COURSE CERTIFICATE



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<https://coursera.org/verify/CSB2CTXDA93X>

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



Feb 6, 2021

Ibad Rather

has successfully completed

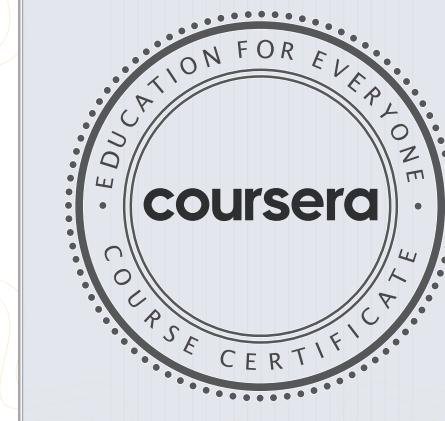
Interfacing with the Arduino

an online non-credit course authorized by University of California, Irvine and offered through Coursera

A handwritten signature in black ink that reads "Ian Harris".

Ian Harris
Professor
Department of Computer Science

COURSE
CERTIFICATE



Verify at:
<https://coursera.org/verify/DWXNDWY24AL5>

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



Oct 11, 2019

Ibad Rather

has successfully completed

Introduction to Computer Vision and Image Processing

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



Aije Egwaikhede
Senior Data Scientist
IBM

Joseph Santarcangelo
Senior Data Scientist
IBM

COURSE CERTIFICATE



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



Apr 8, 2021

Ibad Rather

has successfully completed

Convolutional Neural Networks in TensorFlow

an online non-credit course authorized by DeepLearning.AI and offered through Coursera



A handwritten signature in black ink that reads "Laurence Moroney".

Laurence Moroney
Lead AI Advocate, Google

COURSE CERTIFICATE



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



Feb 8, 2021

Ibad Rather

has successfully completed

Introduction to the Internet of Things and
Embedded Systems

an online non-credit course authorized by University of California, Irvine and offered
through Coursera

A handwritten signature in black ink that reads "Ian Harris".

Ian Harris
Professor
Department of Computer Science

COURSE
CERTIFICATE



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



Oct 6, 2019

Ibad Rather

has successfully completed

Building AI Powered Chatbots Without Programming

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

Antonio Cangiano

Antonio Cangiano
Software Developer and Technical Evangelist
IBM Digital Business Group

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/KP2TVWR26TYJ>

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



Feb 11, 2021

Ibad Rather

has successfully completed

Interfacing with the Raspberry Pi

an online non-credit course authorized by University of California, Irvine and offered through Coursera

A handwritten signature in black ink that reads "Ian Harris".

Ian Harris
Professor
Department of Computer Science

COURSE
CERTIFICATE



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



May 4, 2019

Ibad Rather

has successfully completed

Data Analysis with Python

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

Joseph Santarcangelo
Senior Data Scientist
IBM

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/PLY2B58BS8YU>

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



Mar 28, 2023

Ibad Rather

has successfully completed

Python Project for Data Engineering

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

Ramesh Sannareddy J Santarcangelo

Ramesh Sannareddy
Data Engineering Subject Matter Expert
Skill-up Technologies

Joseph Santarcangelo
Senior Data Scientist
IBM

COURSE CERTIFICATE



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



Apr 24, 2019

Ibad Rather

has successfully completed

Python for Data Science, AI & Development

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

Joseph Santarcangelo
Senior Data Scientist
IBM

COURSE CERTIFICATE



Verify at:
<https://coursera.org/verify/XG2GC3XVKJX>

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



Apr 19, 2019

Ibad Rather

has successfully completed

What is Data Science?

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

Rav Ahuja
Global Program Director,
Skills Network

Alex Aklson, Ph.D.
Data Scientist

COURSE CERTIFICATE



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