JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

VERIFIED
CERTIFICATE

JULY 02, 2015

Sawan Kumar

has successfully completed

R Programming

a 4 week an online non-credit course authorized by Johns Hopkins University and offered through Coursera

Jeff Leek, PhD; Roger Peng, PhD; Brian Caffo, PhD
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

Verify at coursera.org/verify/JPK7LMKJHN

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

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

VERIFIED
CERTIFICATE

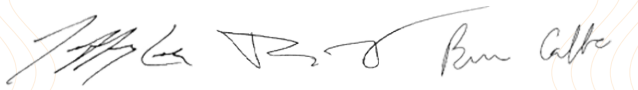
AUGUST 04, 2015

Sawan Kumar

has successfully completed

Regression Models

a 4 week an online non-credit course authorized by Johns Hopkins University and offered through Coursera



Jeffrey Leek, PhD
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

Roger D. Peng, PhD
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

Brian Caffo, PhD, MS
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

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JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

COURSE
CERTIFICATE

11/04/2015

Sawan Kumar

has successfully completed

Practical Machine Learning

a 4 week online non-credit course authorized by Johns Hopkins University and offered through Coursera

Jeff Leek, PhD; Roger Peng, PhD; Brian Caffo, PhD
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

EDUCATION FOR EVERYONE
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JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

COURSE
CERTIFICATE

11/30/2015

Sawan Kumar

has successfully completed

Developing Data Products

a 4 week online non-credit course authorized by Johns Hopkins University and offered through Coursera

Jeff Leek, PhD; Roger Peng, PhD; Brian Caffo, PhD
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

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This certificate does not confer academic credit toward a degree or official status at the Johns Hopkins University.

UNIVERSITY OF MICHIGAN

COURSE CERTIFICATE

Jan 25, 2016

Sawan Kumar

has successfully completed

Programming for Everybody (Getting Started with Python)

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

Charles Severance
Clinical Professor, School of Information
University of Michigan

Verify at coursera.org/verify/W4LTL6ACQHMG

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UNIVERSITY OF MICHIGAN

COURSE CERTIFICATE

Jun 5, 2016

Sawan Kumar

has successfully completed

Python Data Structures

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

Charles Severance
Clinical Professor, School of Information
University of Michigan

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UNIVERSITY OF MICHIGAN

COURSE CERTIFICATE

May 31, 2018

Sawan Kumar

has successfully completed

Using Python to Access Web Data

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

Charles Severance
Clinical Professor, School of Information
University of Michigan

Verify at coursera.org/verify/X7HTSFNT8PW2

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

University of Zurich[UZH]

COURSE CERTIFICATE

Aug 30, 2017

Sawan Kumar

has successfully completed

An Intuitive Introduction to Probability

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

Karl Schmedders
Professor
Business Administration

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

Stanford | ONLINE

COURSE CERTIFICATE

Feb 10, 2018

Sawan Kumar

has successfully completed

Machine Learning

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

Associate Professor Andrew Ng
Computer Science Department
Stanford University

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UC San Diego

HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

COURSE CERTIFICATE

Oct 28, 2018

Sawan Kumar

has successfully completed

Algorithmic Toolbox

an online non-credit course authorized by University of California San Diego and National Research University Higher School of Economics and offered through Coursera

EDUCATION FOR EVERYONE · coursera · COURSE CERTIFICATE

Alexander S. Kulikov, Visiting Professor; Michael Levin, Associate Professor; Neil Rhodes, Adjunct Faculty; Pavel A. Pevzner, Ronald R. Taylor Distinguished Professor of Computer Science, Director, NIH Center for Computational Mass Spectrometry; Daniel M Kane, Assistant Professor, Computer Science and Engineering at the University of California, San Diego

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UC San Diego

HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

COURSE CERTIFICATE

Jan 5, 2019

Sawan Kumar

has successfully completed

Data Structures

an online non-credit course authorized by University of California San Diego and National Research University Higher School of Economics and offered through Coursera

EDUCATION FOR EVERYONE · coursera · COURSE CERTIFICATE

Alexander S. Kulikov, Visiting Professor; Michael Levin, Associate Professor; Neil Rhodes, Adjunct Faculty; Daniel M Kane, Assistant Professor, Computer Science and Engineering at the University of California, San Diego

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

Imperial College London

3 Courses

Mathematics for Machine Learning: Linear Algebra

Mathematics for Machine Learning: Multivariate Calculus

Mathematics for Machine Learning: PCA

Aug 5, 2018

David Dye
Professor of Metallurgy
Department of Materials
Imperial College London

Samuel J. Cooper
Lecturer
Dyson School of Design Engineering
Imperial College London

Marc Deisenroth
Senior Lecturer
Department of Computing
Imperial College London

Sawan Kumar

has successfully completed the online, non-credit Specialization

Mathematics for Machine Learning

A sequence of 3 courses on the prerequisite mathematics for applications in data science and machine learning. Successful participants learn how to represent data in a linear algebra context and manipulate these objects mathematically. They are able to summarise properties of data sets and map them onto lower dimensional spaces with principal component analysis. Finally they can solve optimisation problems and use this skill to train models for describing data such as simple neural networks.

Verify this certificate at:
coursera.org/verify/specialization/KYPN52LK4JEY

Stanford | ONLINE
STATEMENT OF ACCOMPLISHMENT

September 9, 2019

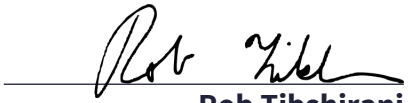
Sawan Kumar

has successfully completed a free online offering of

Statistical Learning

In order to receive a statement of accomplishment, participants were required to score 50 or more of the 100 points attainable on the online quizzes.

Trevor Hastie
John A Overdeck Professor of Statistics
Stanford University



Rob Tibshirani
Professor in Health Research and Policy and Statistics
Stanford University

Authenticity can be verified at **https://verify.lagunita.stanford.edu/SOA/9278ba6e0f0a440aa3cd9b0a65dfff03**

5 Courses

Neural Networks and Deep Learning

Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization

Structuring Machine Learning Projects

Convolutional Neural Networks

Sequence Models

Oct 13, 2019

Adjunct Professor
Andrew Ng
Computer Science

Sawan Kumar

has successfully completed the online, non-credit Specialization

Deep Learning

The Deep Learning Specialization is designed to prepare learners to participate in the development of cutting-edge AI technology, and to understand the capability, the challenges, and the consequences of the rise of deep learning. Through five interconnected courses, learners develop a profound knowledge of the hottest AI algorithms, mastering deep learning from its foundations (neural networks) to its industry applications (Computer Vision, Natural Language Processing, Speech Recognition, etc.).

Verify this certificate at:
coursera.org/verify/specialization/AMAC5TWT3L9V

YONSEI UNIVERSITY

COURSE CERTIFICATE

Mar 16, 2018

Sawan Kumar

has successfully completed

Deep Learning for Business

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

Jong-Moon Chung
Professor, School of Electrical & Electronic Engineering
Director, Communications & Networking Laboratory

EDUCATION FOR EVERYONE · COURSE CERTIFICATE

Verify at coursera.org/verify/ZQ7UDCK66W2K

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

deeplearning.ai

COURSE CERTIFICATE

Jul 14, 2020

Sawan Kumar

has successfully completed

Natural Language Processing with Classification and Vector Spaces

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

Younes Bensouda Mourri, Instructor of AI at Stanford University
Łukasz Kaiser, Staff Research Scientist at Google Brain and Chargé de Recherche at CNRS

Verify at coursera.org/verify/7FTRX3LMYL2Z

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