



Specializations & Certifications

Luyao Wu

Four Areas of Specializations

Programming



Python for Everybody
specialization by
University of Michigan,
Ann Arbor

Mathematics



1. Mathematics for Machine Learning by Imperial College London
2. Mathematics for Engineers specialization by HKUST

Data Science



1. Data Analysis with R specialization by Duke University
2. Machine Learning specialization by Stanford University

Management



MBA Essentials
certificate by London
School of Economics and
Political Science

Programming

Five certifications:

1. Programming for everybody
2. Python data structures
3. Using python to access web data
4. Using databases with python
5. Capstone: retrieving, processing, and visualizing data with python



The image shows a certificate for the 'Python for Everybody' specialization. On the left, a vertical banner features the Coursera logo and lists the five courses: 'Programming for Everybody (Getting Started with Python)', 'Python Data Structures', 'Using Python to Access Web Data', 'Using Databases with Python', and 'Capstone: Retrieving, Processing, and Visualizing Data with Python'. The main body of the certificate includes the University of Michigan logo, the date 'Jul 11, 2023', the name 'Luyao Wu', and a statement that they have successfully completed the online, non-credit specialization. The title 'Python for Everybody' is prominently displayed, followed by a paragraph describing the specialization's content. A signature of Charles Severance is on the right, with his title 'Clinical Associate Professor, School of Information University of Michigan' below it. At the bottom, there is a disclaimer about the non-credit nature of the specialization and a URL to verify the certificate.

5 Courses

Programming for Everybody (Getting Started with Python)

Python Data Structures

Using Python to Access Web Data

Using Databases with Python

Capstone: Retrieving, Processing, and Visualizing Data with Python

Jul 11, 2023

Luyao Wu

has successfully completed the online, non-credit Specialization

Python for Everybody

This Specialization builds on the success of the Python for Everybody course and will introduce fundamental programming concepts including data structures, networked application program interfaces, and databases, using the Python programming language. In the Capstone Project, you'll use the technologies learned throughout the Specialization to design and create your own applications for data retrieval, processing, and visualization.

Charles Severance
Charles Severance
Clinical Associate
Professor, School of
Information
University of Michigan

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/P58RNT8VQ2P4>

Mathematics

Three certifications:

1. Linear algebra
2. Multivariate calculus
3. PCA



The image shows a Coursera Specialization Certificate for the 'Mathematics for Machine Learning' specialization, awarded by Imperial College London. The certificate is for Luyao Wu, dated July 28, 2023. It lists three completed courses: Linear Algebra, Multivariate Calculus, and PCA. The certificate also includes the names and titles of the lecturers: David Dye, Samuel J. Cooper, and Marc Deisenroth.

Imperial College London

Jul 28, 2023

Luyao Wu
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.

Mathematics for Machine Learning: Linear Algebra
Mathematics for Machine Learning: Multivariate Calculus
Mathematics for Machine Learning: PCA

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

Verify this certificate at:
<https://coursera.org/verify/specialization/QDIEY5WLZK48>

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.

Mathematics

Five certifications:

1. Matrix algebra for engineers
2. Differential equations for engineers
3. Vector calculus for engineers
4. Numerical methods for engineers
5. Mathematics for engineers: the capstone course



The image shows a Coursera Specialization Certificate for Luyao Wu. The certificate is issued by Coursera, a platform for online learning, and is awarded for completing a specialization in Mathematics for Engineers. The certificate is dated July 28, 2023, and lists five courses: Matrix Algebra for Engineers, Differential Equations for Engineers, Vector Calculus for Engineers, Numerical Methods for Engineers, and Mathematics for Engineers: The Capstone Course. The certificate is signed by Jeffrey R. Chasnov, Professor of Mathematics. A verification link is provided at the bottom right.

5 Courses

Matrix Algebra for Engineers
Differential Equations for Engineers
Vector Calculus for Engineers
Numerical Methods for Engineers
Mathematics for Engineers: The Capstone Course

Jul 28, 2023

Luyao Wu
has successfully completed the online, non-credit Specialization

Mathematics for Engineers

This specialization was developed for engineering students to self-study the usually required post-Calculus mathematics.

Jeffrey R. Chasnov
Professor
Department of
Mathematics

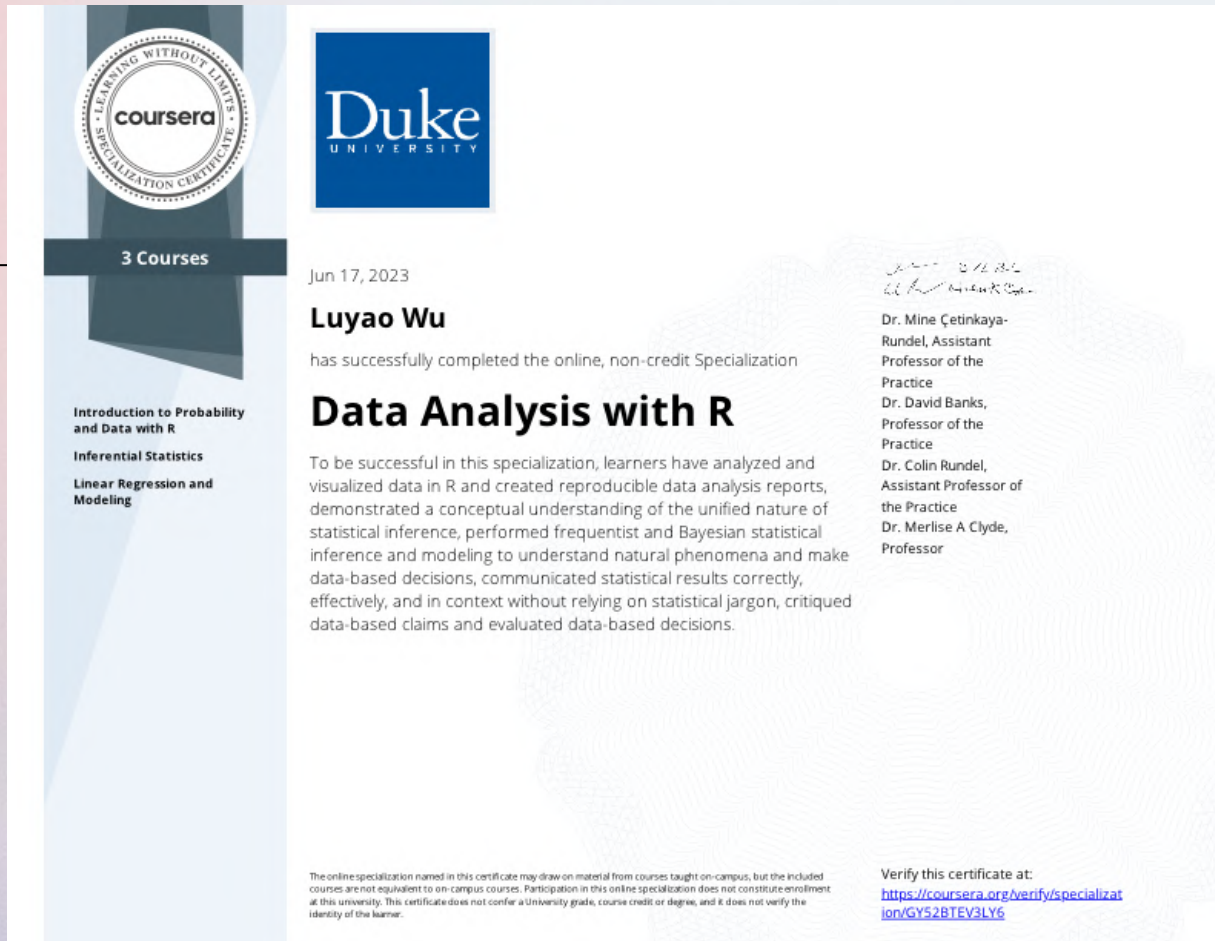
Verify this certificate at:
<https://coursera.org/verify/specialization/K4MDVDZLY748>


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.

Data Science


Three certifications:

1. Introduction to probability and data with R
2. Inferential statistics
3. Linear regression and modeling



 **3 Courses**

Introduction to Probability and Data with R
Inferential Statistics
Linear Regression and Modeling

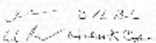


Jun 17, 2023

Luyao Wu
has successfully completed the online, non-credit Specialization

Data Analysis with R

To be successful in this specialization, learners have analyzed and visualized data in R and created reproducible data analysis reports, demonstrated a conceptual understanding of the unified nature of statistical inference, performed frequentist and Bayesian statistical inference and modeling to understand natural phenomena and make data-based decisions, communicated statistical results correctly, effectively, and in context without relying on statistical jargon, critiqued data-based claims and evaluated data-based decisions.


Dr. Mine Çetinkaya-Rundel, Assistant Professor of the Practice
Dr. David Banks, Professor of the Practice
Dr. Colin Rundel, Assistant Professor of the Practice
Dr. Merlise A Clyde, Professor

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/GY52BTEV3LY6>

Data Science

Three certifications:

1. Supervised Machine Learning:
Regression and Classification
2. Advanced Learning
Algorithms
3. Unsupervised Learning,
Recommenders,
Reinforcement Learning



The certificate is a vertical document with a light blue background. At the top left is the Coursera logo, a circular seal with 'LEARNING WITHOUT LIMITS' and 'SPECIALIZATION CERTIFICATE' around the perimeter, and 'coursera' in the center. Below it is a dark blue banner with '3 Courses' in white. To the right of the Coursera logo is the Stanford University logo, a red block with a white circular emblem and the text 'Stanford University'. Below the Coursera logo, the text 'Supervised Machine Learning: Regression and Classification', 'Advanced Learning Algorithms', and 'Unsupervised Learning, Recommenders, Reinforcement Learning' is listed. The date 'Sep 1, 2023' and the name 'Luyao Wu' are printed. Below the name, it says 'has successfully completed the online, non-credit Specialization'. The title 'Machine Learning' is in large, bold, black font. A congratulatory message follows: 'Congratulations on completing all three courses of the Machine Learning Specialization! You studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning. You learned some of the best practices for building machine learning models. You've also gained practical skills to apply machine learning techniques to challenging real-world problems. Now #BreakIntoAI and start building your career in machine learning!'. On the right side, there is a signature in blue ink and a list of names: 'Andrew Ng, Instructor, DeepLearning.AI', 'Eddy Shyu, Curriculum Architect, DeepLearning.AI', and 'Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.AI'. At the bottom left, a small disclaimer states: '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.' At the bottom right, it says 'Verify this certificate at:' followed by the URL 'https://coursera.org/verify/specialization/WKXNN69Y8RZA'.

Supervised Machine Learning: Regression and Classification

Advanced Learning Algorithms

Unsupervised Learning, Recommenders, Reinforcement Learning

Sep 1, 2023

Luyao Wu

has successfully completed the online, non-credit Specialization

Machine Learning

Congratulations on completing all three courses of the Machine Learning Specialization! You studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning. You learned some of the best practices for building machine learning models. You've also gained practical skills to apply machine learning techniques to challenging real-world problems. Now #BreakIntoAI and start building your career in machine learning!

Andrew Ng, Instructor, DeepLearning.AI
Eddy Shyu, Curriculum Architect, DeepLearning.AI
Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.AI

Verify this certificate at:
<https://coursera.org/verify/specialization/WKXNN69Y8RZA>

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Management

Key Concepts :

1. The strategic environment
2. The financial toolkit
3. The human element



THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

This is to certify that

Luyao Wu

Successfully completed the
10-week online certificate course in


MBA Essentials

April 2019 - August 2019

Dame Minouche Shafik
LSE Director



THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■



Certification Attachments

Python for Everybody



Jun 25, 2023

Luyao Wu

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, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/6UOYHDZF4KZ3>

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



Jun 28, 2023

Luyao Wu

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, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/D26Z75CJETXZ>

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



Jul 10, 2023

Luyao Wu

has successfully completed

Using Python to Access Web Data

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

A handwritten signature in black ink, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/42N20E258H2H>

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



Jul 11, 2023

Luyao Wu

has successfully completed

Using Databases with Python

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

A handwritten signature in black ink, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/PBJ2MXVAA4NK>

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



Jul 11, 2023

Luyao Wu

has successfully completed

Capstone: Retrieving, Processing, and Visualizing
Data with Python

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

A handwritten signature in black ink, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan


COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/6C8QHDP54MVT>

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



Certification Attachments

Mathematics for Machine Learning

**Imperial College
London**

Jul 10, 2023

Luyao Wu

has successfully completed

Mathematics for Machine Learning: Linear Algebra

an online non-credit course authorized by Imperial College London and offered through
Coursera



David Dye, Samuel J. Cooper, and A. Freddie Page

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/DU73KN5NJF84>

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

**Imperial College
London**

Jul 5, 2023

Luyao Wu

has successfully completed

**Mathematics for Machine Learning: Multivariate
Calculus**

an online non-credit course authorized by Imperial College London and offered through
Coursera



David Dye, Samuel J. Cooper, and A. Freddie Page

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/YGEE74YG8Z8P>

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

**Imperial College
London**

Jul 28, 2023

Luyao Wu

has successfully completed

Mathematics for Machine Learning: PCA

an online non-credit course authorized by Imperial College London and offered through
Coursera

Marc Deisenroth

Marc Deisenroth
Lecturer in Statistical Machine Learning
Department of Computing
Imperial College London

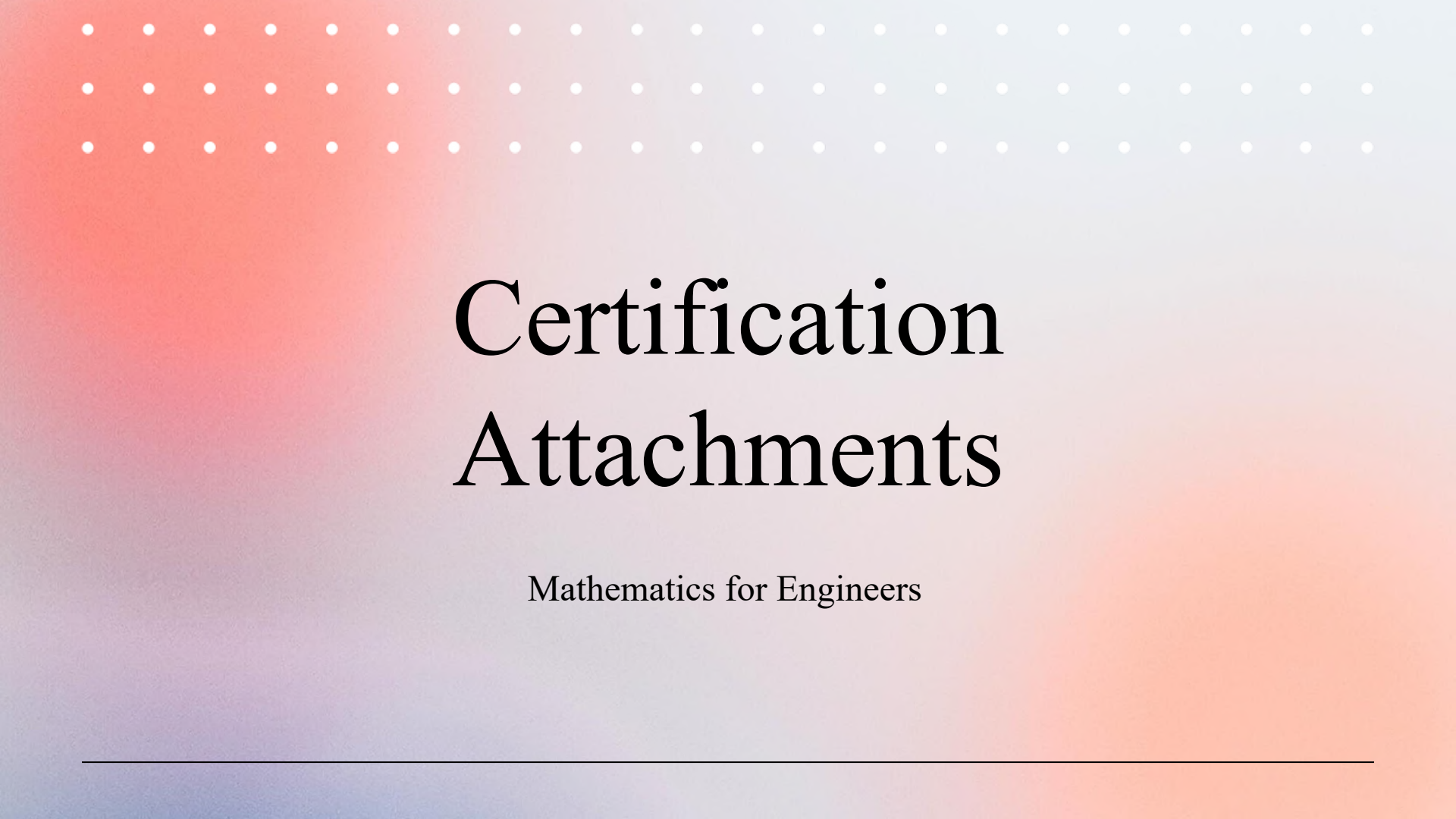
**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/3P8UR6SKVTCY>

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



Certification Attachments

Mathematics for Engineers



Jul 7, 2023

Luyao Wu

has successfully completed

Matrix Algebra for Engineers

an online non-credit course authorized by The Hong Kong University of Science and Technology and offered through Coursera

A handwritten signature in black ink that reads "Jeffrey Chasnov".

Jeffrey R. Chasnov
Professor
Department of Mathematics

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/HU458FU3UGP9>

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



Jul 28, 2023

Luyao Wu

has successfully completed

Differential Equations for Engineers

an online non-credit course authorized by The Hong Kong University of Science and Technology and offered through Coursera

A handwritten signature in black ink that reads "Jeffrey Chasnov".

Jeffrey R. Chasnov
Professor
Department of Mathematics

COURSE CERTIFICATE



Verify at:

<https://coursera.org/verify/MBJ3S5SE4EHN>

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



Jul 15, 2023

Luyao Wu

has successfully completed

Vector Calculus for Engineers

an online non-credit course authorized by The Hong Kong University of Science and Technology and offered through Coursera

A handwritten signature in black ink that reads "Jeffrey Chasnov".

Jeffrey R. Chasnov
Professor
Department of Mathematics

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/3W7LP6J3JGES>

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



Jul 26, 2023

Luyao Wu

has successfully completed

Numerical Methods for Engineers

an online non-credit course authorized by The Hong Kong University of Science and Technology and offered through Coursera

A handwritten signature in black ink that reads "Jeffrey Chasnov".

Jeffrey R. Chasnov
Professor
Department of Mathematics

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/YQGJHPGSDS7S>

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



Jul 20, 2023

Luyao Wu

has successfully completed

Mathematics for Engineers: The Capstone Course

an online non-credit course authorized by The Hong Kong University of Science and Technology and offered through Coursera

A handwritten signature in black ink that reads "Jeffrey Chasnov".

Jeffrey R. Chasnov
Professor
Department of Mathematics


**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/LGLE5G23G3YW>

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



Certification Attachments

Data Analysis with R



Jun 15, 2023

Luyao Wu

has successfully completed

Introduction to Probability and Data with R

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

A handwritten signature in black ink, appearing to read "Dr. Mine Cetinkaya-Randel".

Dr. Mine Cetinkaya-Randel
Associate Professor of the Practice
Statistical Science, Duke University

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/Y4QYCj42WUE3>

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



Jun 17, 2023

Luyao Wu

has successfully completed

Inferential Statistics

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

A handwritten signature in black ink, appearing to read "Dr. Mine Cetinkaya-Randel".

Dr. Mine Cetinkaya-Randel
Associate Professor of the Practice
Statistical Science, Duke University

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/3A6KLWOYPXZ4>

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



Jun 17, 2023

Luyao Wu

has successfully completed

Linear Regression and Modeling

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

A handwritten signature in black ink, appearing to read "Dr. Mine Cetinkaya-Randel".

Dr. Mine Cetinkaya-Randel
Associate Professor of the Practice
Statistical Science, Duke University


COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/SCW7V2U3W58R>

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



Certification Attachments

Machine Learning



Stanford ONLINE

Aug 31, 2023

Luyao Wu

has successfully completed

Supervised Machine Learning: Regression and Classification

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

Andrew Ng, Instructor, DeepLearning.AI
Eddy Shyu, Curriculum Architect, DeepLearning.AI
Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.AI

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/5L19LF7ACCNK>

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



Stanford ONLINE

Aug 31, 2023

Luyao Wu

has successfully completed

Advanced Learning Algorithms

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

Andrew Ng, Instructor, DeepLearning.AI
Eddy Shyu, Curriculum Architect, DeepLearning.AI
Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.AI

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/CXHB7F58543Q>

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



Stanford ONLINE

Sep 1, 2023

Luyao Wu

has successfully completed

**Unsupervised Learning, Recommenders,
Reinforcement Learning**

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

Andrew Ng, Instructor, DeepLearning.AI
Eddy Shyu, Curriculum Architect, DeepLearning.AI
Aarti Bagul and Geoff Ladwig, Curriculum Engineers, DeepLearning.AI

**COURSE
CERTIFICATE**



Verify at:

<https://coursera.org/verify/YSUFB6JVVRA7>

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



Thank you!
