The MOOC revolution: Status and next steps

Andrew Ng
Stanford University & Coursera
Courses from Top Universities

Andrew Ng

18 of the top 25 US Universities (ARWU rankings)

49 top universities from 20 countries

9 other partners (teacher professional development)
108 Partners

550 Courses

6.0 million Students

TIME SPENT WATCHING VIDEOS

48,784,829 hours
that’s 5,556 years...

TOTAL COURSE ENROLLMENTS

19.1 Million

TOTAL VIDEO VIEWS

301,395,723

BREAKDOWN OF COURSES

Top 5 most popular course subjects

1. Computer Science 9,428,982
2. Humanities 3,861,497
3. Business & Management 3,578,064
4. Economics & Finance 3,302,253
5. Information, Tech & Design 2,399,790

(By total number of enrollees)
Video based instruction

- Sustainability
- Health Policy & the Affordable Care Act
- Introduction to Sociology
- Gamification
Don’t click “Continue” Yet! First, answer the below question, then click submit.

Lecture Quiz: 1.1 (Bandage Removal)
Which strategy of bandage removal would you choose?

- Short bursts of extreme pain (20028 Responses) 48%
- Long periods of less intense pain (21290 Responses) 52%

Total: 41318 respondents

If you have trouble seeing the poll, click here to open it in a new window.
Who discovered the theory of general relativity?

Albert Einstein

What is the derivative of $\frac{\sin(x)}{x}$ w.r.t. $x$?

\[
\frac{x \cos(x) - \sin(x)}{x^2}
\]

Your submission is equivalent to:

\[
\frac{x \cos(x) - \sin(x)}{x^2}
\]

---

```javascript
image = new SimpleImage("puzzle-copper.png");

for (pixel: image) {
    // your code here
    pixel.setRed(0);
    pixel.setGreen(pixel.getGreen() * 10);
    pixel.setBlue(pixel.getBlue() * 10);
}

print(image);
```

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<td>9</td>
<td>Dist. per sales person</td>
<td>3</td>
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**Autograded Homeworks and Exercises**

Andrew Ng
An Introduction to Interactive Programming in Python
by Joe Warren, John Greiner, Stephen Wong, Scott Rixner

Share and run code in the browser

Andrew Ng
Game integration (National Taiwan University)
Third-party integration
Your Final Project

For this course, your Final Project is to apply the course concepts to real-world situations. This is your chance to apply the course concepts to real-world situations.

Your assignment is to select an artwork that you would like to use as the starting point for an inquiry-based lesson in your classroom.

Format: Please provide the following information in the order that it is presented below:

1. Subject Area
2. Intended grade level range
3. Artwork Selection (please use the "Upload an Image" button or insert a link to the image)
4. Artwork Title
5. Artist
6. Date
7. Materials

Evaluation/feedback on the above work:

- Does the activity relate to the artwork?
- Are the instructions/prompts clear?
- Is the activity developmentally appropriate?
Creative, open-ended homework via peer grading

LaPtabel
laptop table

DuoSlim
portable device holder

Neo-WD
space-efficient workdesk

Ramaswamy Venkatachalam
Gujarat, India

Aranzazu Hurtado Ruiz
Madrid, Spain

Paul Mendoza
Manila, Philippines
Day of Compassion Award

In August and September of 2013, students from over 200 countries took the world’s first Social Psychology “MOOC” (massive open online course). The class was offered by Wesleyan University, hosted by Coursera.org, and drew more than 250,000 students, making it the largest synchronous university course ever given.

The final assignment of the course, “The Day of Compassion,” asked students to live 24 hours as compassionately as possible and to analyze the experience. Roughly 700 students received a perfect score on the assignment, a class then voted on which of these students deserved a Day of Compassion Award given by the Stanford University Center for Compassion and Altruism Research and Education (CCARE).

In 2014, the grand prize winner will be flown on an expense-paid trip to Stanford University. The winner will have the opportunity to meet the Dalai Lama when he visits that area. In addition, CCAF will donate $1,000 to any prosocial nonprofit organization chosen by the grand prize winner. In addition, CCAF will donate $100 to nonprofits chosen by each of ten students who received Honorable Mention.

Balesh Jindal, a physician and artist who lives in a rural area near New Delhi, India, won the grand prize for finding a way to address the problem of sexual violence toward girls in her community. During the Day of Compassion, Balesh visited a local school that has more than 2,000 female students ranging from 4 to 17 years old and belonging to a relatively low socioeconomic class. The school divided students by age into five groups of 350-400 girls, and Balesh taught each group about inappropriate touching and how to report incidents of abuse. These talks uncovered multiple cases of abuse by neighbors, brothers, cousins, and even fathers. After the Day of Compassion, Balesh invited the mothers of abused girls to her nearby clinic for free counseling, and she decided to set aside one day each week to help these girls and to work on reducing child sexual abuse.
Information storage

The problem summary:
How is the information stored in our brain? As in computers we use potentials, or magnetization for example to make an array of binary code (1 or 0), what is the analogous in the brain?

Steps to reply:
- We have work done in real time, parallel activations may cause different memories to be activated.
- The question is not how the memories are stored, it is where in the brain.
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Student 1: A day ago
The problem summary: How is the information stored in our brain? As in computers we use potentials, or magnetization for example to make an array of binary code (1 or 0), what is the analogous in the brain?

Student 2: A day ago
The question is not how the memories are stored, it is where in the brain. Parallel activations may cause different memories to be activated.

Student 3: A day ago
The question is not how the memories are stored, it is where in the brain. Parallel activations may cause different memories to be activated.

Anonymous: 20 hours ago
The question is not how the memories are stored, it is where in the brain. Parallel activations may cause different memories to be activated.

Student 4: 5 minutes ago
I've already worked a lot on this before starting with this course (nonetheless I learned a lot of details in the course). One of the most interesting papers I found is that information is represented feature based \( \text{http://www.cs.rochester.edu/users/faculty/dana/tanifuji.pdf} \). I've already tried around building some small information processing algorithms based on this. If you are interested we could probably talk a bit about it.
The Humanities, Sciences, Engineering, Business, ….
Global community of learners
Coursera makes studying easier for me. I could sit at home and learn like I’m at school, no distractions just me, my head phones and my books. ... I could earn certificates ... without spending a dime to get to my local school. It helps me a lot since my mom is in the hospital and financially, I cannot afford to attend school. (Amanda, Dominica)
>75% have a Bachelor's degree

Most students 20 to 39 years old
Andrew Ng

Andrew Ng (吴恩达) 是斯坦福大学计算机科学系的副教授，他还担任斯坦福大学人工智能实验室主任，该实验室是斯坦福大学主要的人工智能研究机构，共有15名教授以及150名学生和博士后。2008年，他与斯坦福大学专业发展中心（SCPD）创立了SEE（Stanford Engineering Everywhere），并为斯坦福大学几十个工程学科课程开放给大众。这也是斯坦福大学第一次尝试免费分式化的教育方式，有超过一百万人选修了SEE的课程视频。在斯坦福大学，他同时还领导开发了OpenClassroom 和 ml-class/db-class 在线教育平台，也就是 Coursera 的前身。2011年，他在ml-class平台上讲授了机器学习课程，该课程是斯坦福最早的大型在线课程之一，共有超过10万名学生参加。

除了在在线教育以外，吴恩达还在机器学习领域工作，特别致力于使用大规模的脑机接口来构建人工智能系统。他的前期工作包括无人驾驶直升机、斯坦福人工智能机器人（STAIR）项目和 ROS （目前使用最广泛的开源机器人软件平台）。吴恩达作为作者或共同作者在机器学习领域发表了超过150篇论文，他的团队获得过ICML、ACL、CEAS和ICCV等会议的最佳论文及最佳学生论文奖。他还获得了斯隆基金奖学金，还获得2009年获得了人工智能领域的最高奖之一的LUCAS Computers and Thought award。

Lila Ibrahim（莉拉·易卜拉欣）是Coursera 的主席，她还曾是Team4Tech公司的联合创始人以及
Courses in multiple languages
Mobile app
Earn a Verified Certificate.

[Image of Duke University logo and course title: Introduction to Genetics and Evolution by Mohamed Noor]

Regular price: $96.00
Introductory price: $49.00

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Your Work, Your Identity
Link your coursework securely to your real identity using your photo ID and unique typing pattern.

Earn a Verified Certificate
Earn official recognition from Duke University and Coursera for your accomplishment with a verifiable electronic certificate.

Share Your Success
Share your course records with employers, educational institutions, or anyone else through a unique, secure URL.

Signature Track Courses
Andrew Ng
Duke UNIVERSITY

APRIL 09, 2013

Jacob Lyles

has successfully completed with distinction

Introduction to Genetics and Evolution

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

Verify at coursera.org/verify/THC6R1DF8

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

Signature Track

Andrew Ng
Student Motivations: Plans for verified certificate

- List on my resume/CV: 76.6%
- Show my qualifications in a new field: 66.0%
- As motivation to finish my course: 57.4%
- Advance my qualifications in my current field: 44.7%
- List on my LinkedIn profile: 42.6%
- Assist in a career change: 38.3%
- Assist in a new job search: 38.3%
- Print a paper copy: 38.3%
- Present to my employer: 19.1%
- Present to my school: 12.8%
Cryptography

Course 1

Upcoming Session: Sep 15th 2014
Duration: 8 weeks

Introduction and Motivation
- Classical Encryption Schemes
- Principles of Modern Cryptography

Perfect Secrecy and Its Limitations
Private-Key Encryption

1. Cryptography
2. Software Security
3. Usable Security
4. Hardware Security
5. Capstone Project
Specialization Certificate

has been presented to

Jane Learner

on July 6, 2014 for successfully completing

Data Science

a non-credit series authorized by Johns Hopkins University through Coursera
First lectures posted

STATISTICS

& ANALYTICS
Data: Learn how students learn

deadlines only
“The mind is not a vessel that needs filling, but wood that needs igniting.”

—Plutarch

from Ian Kidd's translation of Essays
The Best of Both Worlds: Flipped Classroom

- High-quality online content
- Produced locally or adopted from another institution.

- Peer Instruction
- Small group problem solving
- Mentoring/Coaching
"Improved Learning in a Large-Enrollment Physics Class."

![Bar chart showing attendance, engagement, and learning percentages for lectures and active learning sessions.]

- **Attendance**
  - Lecture: 58%
  - Active Learning: 81%

- **Engagement**
  - Lecture: 50%
  - Active Learning: 85%

- **Learning**
  - Lecture: 41%
  - Active Learning: 74%

**Igniting Minds**
Education for Everyone

Andrew Ng