The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization name:
Udacity

Organization URL:
https://www.ai-class.com/

Project Name:
ai-class.com

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

The project addressed the need to make quality education available to everyone, regardless of their geographic location or economic circumstances. The project's success is measured by the number of people who completed the class, on all tracks, taking into account their proficiency as measured by interactive quizzes, homework, and exams and also by the number of different countries the participants represented.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

The AI-Class project used video lectures, recorded exclusively for the course, with interactive quizzes embedded in the videos. Depending on whether or not the quiz was answered correctly, students could watch either an explanation of how to arrive to the right answer or could choose to watch the next topic, if they understood everything. This type of presentation, together with homework and exams, greatly increased the engagement of the students and personalized their experience. While there are a lot of different video lectures made available for public, AI-Class's instructors, Sebastian Thrun and Peter Norvig, changed the commonly used format considerably in several ways. The videos were much shorter, presented in a way that gave the impression of one-to-one tutoring. The embedded short quizzes were engaging the students in a thinking

process about the lecture subject instead of just checking if they have mechanically learned some concepts. Unlike other open courses, this course combined the benefit of online study "anywhere, anytime" with the benefit of a simultaneously running class with deadlines, student community and direct feedback from teaching staff via Office Hours. In the background, the course team was using auto-grading methods for quizzes, homework and exams. There was a course website for students that measured the progress of each student in the class and provided students with the ability to ask questions and vote on questions asked by other students. The most popular questions were then answered by professors in weekly Office Hours videos. The biggest challenge was to present the topics in a way that could be understood by students coming from a wide variety of backgrounds, to make the quizzes engaging and thought provoking and to ensure the technological base to accommodate several tens of thousands of students doing homework or exams at the same time.

Please list the specific humanitarian benefits the project has yielded so far.

High-quality education made accessible to a large number of people from different backgrounds who would never get the chance for this otherwise. Students from over 190 countries registered for the ai-class.com course and there were more than four million visits during its ten week run. Over 20,000 completed the advanced track, which required completing the same homework and exams given to Stanford University students. This is more than twice the number of students who received a BS in computer science in the United States, according to the most recent CRA Taulbee Survey (http://www.cra.org/taulbee/tables/0910/Tables9-16.html).

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

"I am from Pakistan, which you can call a third-world country, and due to my own financial problems, I could not pay for my education since my father died 10 years ago. But now I work in a factory and started learning computer science after 10 hours of hard mechanical work. Here in Pakistan, poor quality education is provided. Even the good universities and my university is considered the lowest here. So imagine the kind of education I was getting after all my efforts, and suddenly out of nowhere, I came to know about the Stanford courses and I got the teachings of the world's best teachers in AI. Even my percentage is 82 % because I can only study on the last day of the week due to my job. I'm very happy for what I have learned and for me it's priceless." - Aiqus (ai-class forum user). "I had never participated in an online course before, and without any doubt I can say now that this experience is simply amazing. Giving a course online has lots of benefits: anyone, anywhere, from any culture of the world, with any academic background can participate in this course. ...The only thing they need is an Internet connection. ...I think I found my element with AI-Class. I'd like to spend my professional life in something related with AI when I finish my university studies." - Pedro. "I live on a 100-acre farm in the Aussie Bush, and while I love living here, I don't meet other programmers often, let alone anyone working at the frontiers of research. ...For the last few weeks watching the lectures and doing the assignments has been the highlight of my week. Thank you!" - Yasir.