



CASE STUDY

Overview

The University of Florida (UF), a top-ranked institution with 16 academic colleges and over 150 research centers, is at the forefront of introducing AI education at the school level. Partnering with the Florida Department of Education, UF has launched the AI Foundations program and has formulated criteria for four courses in alignment with Florida's AI teaching standards for state certification: AI in the World, Applications of AI, Procedural Programming for AI, and Machine Learning for AI. UF's framework of AI education for K-12 programs not only outlines course descriptions, but also ensures alignment with state learning standards, certificate requirements, and instructor upskilling.

Challenge

Among the various challenges faced by the University of Florida, a significant one was to establish a comprehensive courseware repository for district schools that would enable AI for K-12 training. Once they explored CloudLabs' AI-900 pre-built labs, they promptly joined us to facilitate hands-on training for school students.

The AI for K-12 course curriculum aimed to foster foundational skills related to artificial intelligence, machine learning, and robotics among students. These are complex topics and require analytical thinking, for which theoretical courseware cannot suffice. However, Florida's district schools did not have the required courseware, such as hands-on labs, that could support a practical training approach.

UF was conducting professional development programs for instructors who would train school students on AI. This initiative aimed at preparing them for effective teaching, offering guidance on lesson plans and resources, and ultimately empowering them for impactful training. To make such Professional Development programs for instructor coaching a success, the University of Florida required hands-on labs for practical training and upskilling.

Challenges in K-12 AI education include a resource shortage. Microsoft's Azure for Students, offering free subscriptions, complicates matters by requiring student email authentication, often prohibited in district schools. These subscriptions restrict resource access, and the non-renewable credits further impede continuous use. Consequently, school faculty must invest substantial time in developing their own resources.

Schools needed detailed, step-by-step instructional courseware to facilitate students in completing their tasks for each lab. This was crucial in ensuring students developed the necessary skills by performing labs accurately and achieving desired outcomes.



Determining certification success proved challenging without the aid of analytics. Additionally, assessing student performance in individual lab environments was both time-consuming and exhausting. The ideal solution to streamline this process would involve implementing an automated assessment system for individual students, complete with detailed reports outlining each student's lab performance and outcomes.

In order to qualify for the Perkins Funds, which are federal grants that support career and technical education programs, the instructors who would teach the AI courses to the students had to be certified in Azure. This was a challenge for UF, as the instructors needed to access all the labs in advance and practice for the Azure certification exam.

Solution

CloudLabs served as a comprehensive solution for the district schools venturing into AI education for the first time. With simulated environments hosted in the cloud, the entire training process is efficiently managed end-to-end, ruling out the complexities associated with cloud-based training. CloudLabs provided pre-built AI-900 labs with 17 modules for each user. These are pre-packaged labs with detailed lab guides and practice tests.

CloudLabs' pre-built labs require no additional setup, ensuring instant deployment for instructors and easy access for students. With seamless single-click distribution, students can access labs via a shared URL, offering scalability based on user count. This hassle-free solution minimizes troubleshooting, making it perfect for AI-enabled practical learning.

The University of Florida organized training workshops for instructors from different district schools in Florida. The goal of the training sessions was to upskill the teachers by giving them the hands-on guidance and support they would need when undergoing classroom instruction. To make these workshop trainings a success, CloudLabs provided 50 AI-900 labs to instructors from different public schools who could further impart training to their school students.

While collaborating with CloudLabs, students and faculty would not have to worry about exhausting the free cloud credits before the year ends and would get access to all required resources as per the course design. CloudLabs, a Microsoft Authorized Lab Host, offers labs for all MOC courses. These are fully managed, pre-built labs with no additional cloud spending. Everything is included, with no scope for any unforeseen expenses. Hence, institutions can allocate a fixed budget for their cloud training programs.

To help students complete various tasks in simulated lab environments, the CloudLabs platform offers detailed lab guides with step-by-step instructions. This would help students follow the entire process thoroughly and leave minimal scope for human error while doing the lab assignments.

To help students complete the labs successfully and identify areas for improvement, CloudLabs offers a lab validation feature. After completing the tasks, students can validate their labs by clicking the lab validation button in the virtual machine. A successful lab validation status indicates successful task completion, whereas if any step is missed or done incorrectly, students will receive a review message to reattempt and correct it.

Student assessment can be automated with the lab validation feature, reducing a significant workload for the instructors. Instead of manually assessing the individual student environment, they can get the lab validation report, which offers a detailed report of the number of students who managed to complete the lab successfully, students who failed, and individual student scores.

CloudLabs provided a two-week license to the instructors to access the AI-900 pre-built labs and work with the grant coaches to prepare for the exam. As a result of this collaboration, the instructors had a 100% pass rate for the Azure AI-900 certification, which demonstrated their proficiency in AI and machine learning fundamentals.

Result

Students newly introduced to AI education were provided access to meticulously designed lab environments. These well-framed labs were equipped with detailed lab guides, facilitating easy navigation throughout the lab exercises. This helped in better understanding concepts and applying them to real-world situations, further improving learning outcomes.

The introduction of AI at the school level resulted in positive outcomes, with increased certification rates in public schools. The CloudLabs platform played a pivotal role in equipping district schools with the essential resources to seamlessly incorporate AI into their curriculum. This included hands-on labs, user-friendly lab guides, real-time instructor support via shadow labs, and lab validation for students' self-assessment, all contributing to an impactful learning experience.

Instructors could eliminate the manual task of assessing student performance with CloudLabs' auto-grading capabilities coupled with the Lab Validation feature. Instructors found their workload significantly streamlined, allowing them to prioritize training as their central focus. On the other hand, students could implement self-assessment practice by validating labs after every task, identifying their mistakes, and rectifying them.

CloudLabs has emerged as the top choice for Florida district schools owing to its stringent adherence to U.S. regulations, including the Children's Online Privacy Protection Act ("COPPA") and the Family Educational Rights and Privacy Act ("FERPA"). By prioritizing student privacy, Florida's district schools have seamlessly integrated with CloudLabs, establishing it as a trusted educational platform that aligns perfectly with their compliance requirements.

Conclusion

CloudLabs proved to be the perfect solution for the University of Florida in developing courseware for AI training for K-12. Hands-on learning in dynamic lab environments that closely mirror real-life scenarios significantly contributed to skill development in young learners. Instructors who participated in workshop training were highly influenced by the platform's capabilities for shadow labs and lab validation, making them advocates for CloudLabs in their respective schools. CloudLabs provided a total of 52 AI-900 labs for classroom training for a duration of 35 days. The lab validation feature not only offers auto-grading and self-assessment for students but also provides valuable insights into certificate completion rates. This capability has proven invaluable for public schools, enabling them to closely track student progress and certification success.

With CloudLabs, district schools were able to execute the learning by doing philosophy for holistic AI training at the school level.



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