

This is why auto-proctoring is already a rage



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Introduction

What started as an experiment has grown into a go-to solution, helping countless academicians and students tide over the educational continuity challenges concerning examinations. From doing away with the setting up of physical exam centers to give exams remotely and expediting the evaluation process irrespective of the scale, online proctoring has empowered the education community to surmount every obstacle in these uniquely challenging circumstances of a global health emergency.

In its varied manifestations, proctoring has been the best alternative for universities, colleges and other centers of learning the world over. In fact, proctoring has now become the foremost consideration for a variety of exams. The scope of proctoring is evolving rapidly, with a radically developing technology.

Until now, online proctoring required a trustworthy invigilator known as a 'proctor' to monitor students remotely using a computer. The prerequisite to such a proctoring was switching on the audio and video on the test-takers' computers.

Mostly, the proctors hired for invigilation are not faculty members, but trained professionals adept at remote proctoring nuances, thereby assuaging concerns with strict scrutiny. They offered notable supervision and control over cheating.

A real-time video of the students would stream on the proctor's system, from start to finish, to ensure compliance with the exam guidelines.



There are several ways a proctor gathers information, monitoring the proceedings virtually:

- They are vigilant of various noises, such as whispering or mumbling in the background to ascertain any additional person's presence near the student.
- They are observant of every student's behavior during the exam to eliminate questionable instances.
- They are mindful of any connected devices and gadgets such as smartphones or tablets on the student while taking the exam.
- They are proficient at managing students across multiple time zones.
- They are exceptionally particular about preserving academic honesty and ensuring that students accord due respect to the exam process.

Thus, a human proctor does everything to lend credibility and integrity to the examination process and preserve the educational organization's reputation.

Eminent online [proctoring service providers](#) offer a competitive advantage to universities and educational centers, globally, by enabling 'auto proctoring' in exams.

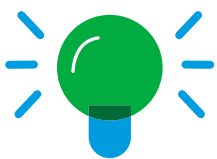
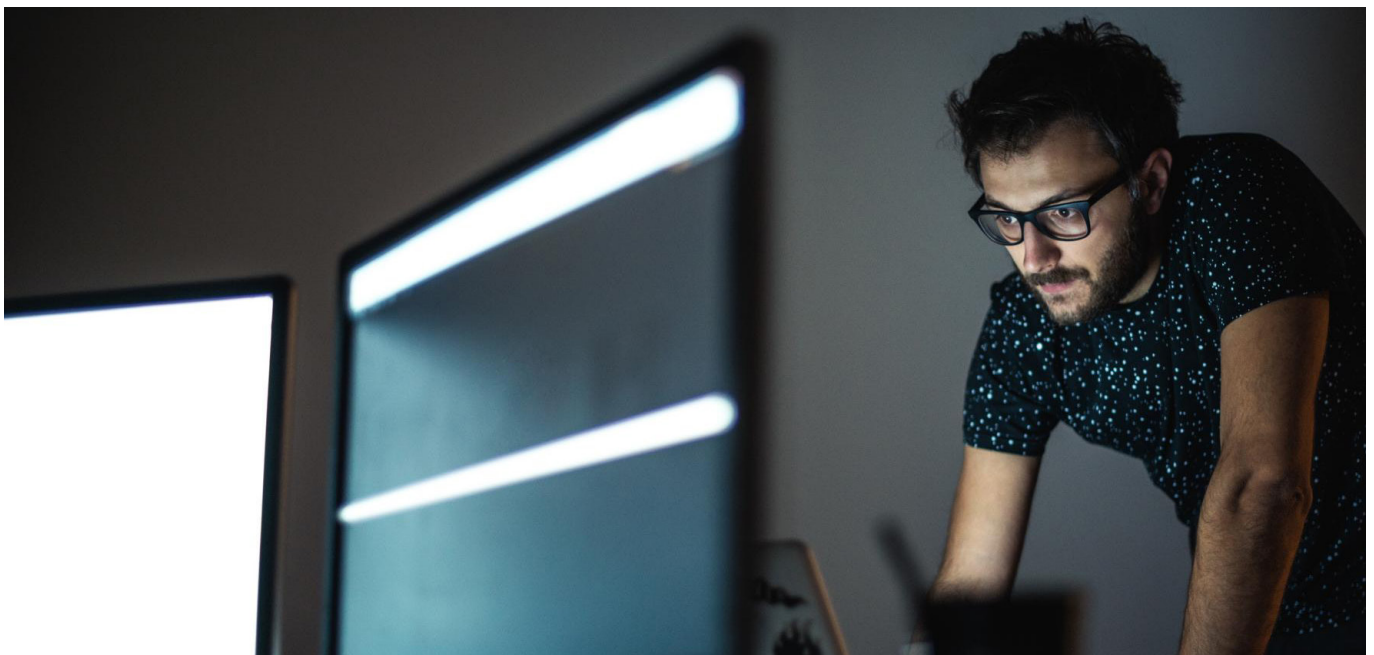


What is auto proctoring?

Auto proctoring meaning AI-enabled automated proctoring that helps conduct online examinations without human intervention. It is an advanced form of proctoring that ensures minimal chances of error and 95 percent accuracy in predicting distractions or other suspicious activities.

A proficient auto proctoring system considers human proctor's observations using an algorithm. It can replicate the way humans process information and make the right decisions. Hence, auto proctoring enhance human abilities, not just replaces them.

From ensuring the test-taker's authenticity, identifying other faces in a testing environment, to restricting any form of on-screen cheating, auto proctoring is an additional set of eyes during an examination process that flags untoward instances. It also records the proceedings, adding it to the exam administrator's results for a later review and assessment. Such levels of reliability lend incredible ease and integrity to the process of auto-proctoring online exams.



An auto proctored online test is an incredibly flexible and convenient option for students and a highly scalable approach for institutes.

How do auto proctored tests work?

Auto proctored test meaning an auto proctoring mechanism guided by AI to prevent, detect and gather evidence of any untoward activity during an online auto-proctored test.

Here's how an automated proctoring system operates:

After mining and analyzing hoards of data on patterns and trends in test-takers' behavior, an AI algorithm is trained by experts to assist in proctoring. The AI empowers the system with predefined parameters to gauge candidates' behavior and movements. The AI's advanced algorithms enable it to predict, flag and register even the minutest of discrepancies and suspicion.

This AI algorithm is then created into logic or reasoning and embedded into the system. Hence, when auto proctoring is initiated, the AI imbibes the information it sees for processing and assessment, just like a human proctor. This logic is customizable. After understanding the learning and measurable outcomes for respective exams, blueprints are created with logic for the algorithm to catch various discrepancies.

The system must receive the following, to ensure a seamless auto proctoring experience:

- a) A glitch-free video feed: A computer with an operational webcam, which must be switched on throughout the duration of the test.
- b) An excellent audio feed: A functional microphone must be switched on during the test.
- c) Continual recording: Every proctoring session is recorded for future reference and can be viewed later using the proctoring software.



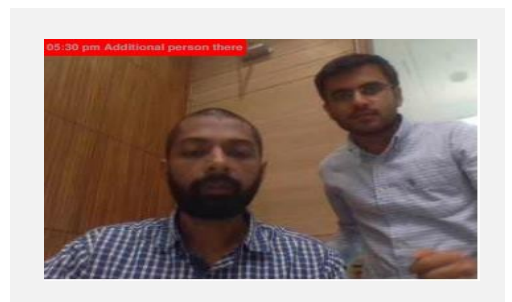
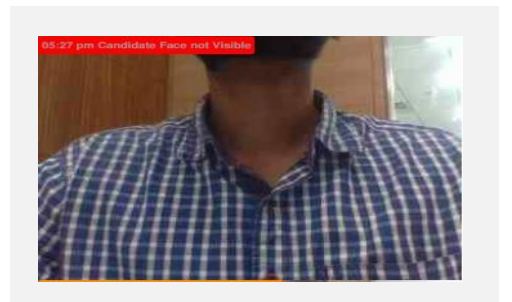
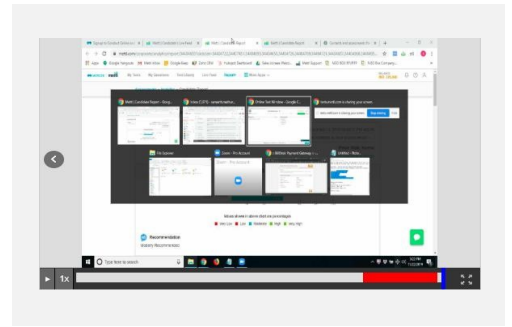
Mercer | Mettl has a proprietary algorithm, the 'Credibility Index,' which is an excellent predictor providing administrators with the most relevant results. Credibility Index auto-generates a report that highlights the applicants' integrity scores for a proctored session.

The types of cheating instances flagged with auto proctoring:

- It flags incidental occurrences such as the students moving away from their screens or hiding their faces, causing partial visibility.
- It points out the presence of any unauthorized person, visible within the camera frame.
- It highlights the sound of a person speaking to the student but not visible to the camera.
- The presence of an unapproved device and distracting movements are also flagged.
- Opening any unauthorized website or moving away from the test window, without completing the test, are reported and flagged.



With valuations showcased as high, medium and low, examiners can swiftly identify and filter out candidates who may have resorted to cheating.



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How is the credibility index calculated?

The Credibility Index takes inputs from Mercer | Mettl's proctoring flags and the test-finish status.

These flags and conditions are:

Visual proctoring flags



Face not visible or partially visible



Presence of another person



Distracted movement



Noisy environment



Presence of an unauthorized device



Away from the test window

Browsing tolerance

It indicates the number of times students attempt cheating, using on-screen aids such as opening unauthorized websites, accessing blacklisted software/third-party applications, enabling browsers and cheating tools.

The analysis is based on the insights mentioned-above, guaranteeing the authenticity and validating the online proctoring process.

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What all does the AI measure?

The Credibility Index takes inputs from Mercer | Mettl's proctoring flags and the test-finish status.

The number of times something is flagged

Type of action flags

Cheating probability



All these culminate into a **'Credibility Index'** report.

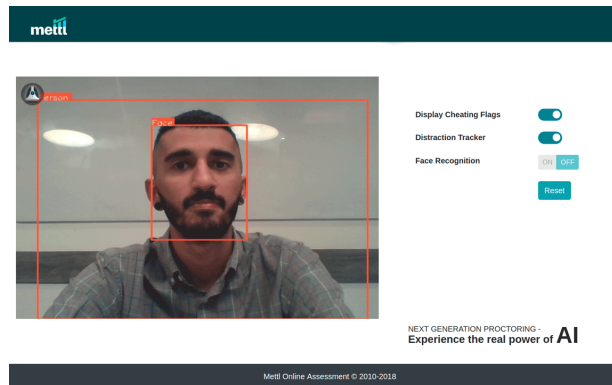


Types of online auto proctoring

Three types of online auto proctoring eliminate cheating:

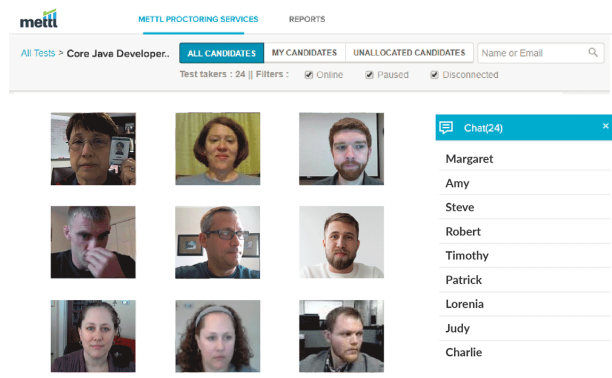
1. Video proctoring

Online video proctoring meaning the test-taker's entire proctoring session is recorded automatically by the system. This continual video streaming is then played by the exam administrator at their convenience to check for suspicious activities during the online exam. The examiner analyses the flags raised by the AI during the session and their understanding of the test-takers' actions to eliminate malpractice instances. A discernible advantage of a video proctoring exam is that it does not require strict scheduling since the test-takers can take the exam at their chosen time. Video proctoring is similar to a webcam proctored test. A video proctoring system is adequate for low-stakes exams.



2. Audio proctoring

Audio proctoring leverages the microphone to scan the test-takers' physical environment for additional sounds or noises to minimize instances of cheating. It is useful in ascertaining the differences between sounds that can and must not be in a testing environment. For example, Mercer | Mettl's audio proctoring software is robust enough to alienate sounds for students taking an exam in a cyber cafe. This proctoring accurately identifies details such as low sound levels, whispers, mumbling and other such discrepancies to ensure a safe examination environment.



3. Image proctoring

Image proctoring is a type of auto proctoring that captures the test-takers' photos in real-time when they appear for the test. A robust proctoring service provider will provide random snapshots/live images of the test-takers' screens and presence in front of the camera at regular intervals, preferably every ten seconds. These images taken through their system's webcams are time-stamped and stored on the cloud for review. Image proctoring is relatively cost-effective as compared to video streaming quality but is equally reliable


ProctorPlus Enhancements mettl

Adam Test Taken on: November 12, 2018 05:31:29 PM IST
adamg@bbs@mettl.com Finish State: Normal
Credibility Index: **LOW**


Registration Details

Email: adamg@bbs@mettl.com First Name: Adam
Address:

Profile Picture Snapshot



Identity Card Snapshot





Each of these auto proctoring types allows the examiner or the administrator to validate whether the test-taker has taken the exam fairly. Similarly, the stored data ensures transparency for the test-taker, enabling them to refute false claims to preserve their credibility.

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Benefits of auto proctored online tests

Apart from lending fairness and feasibility to the invigilation process, auto proctored tests simplify the entire examination process for both educators and students. They make auto proctored cheating difficult, also streamlining the examination infrastructure in several ways. Here's how:



Scalability:

By handling hundreds of data points and a vast number of students at any given time, auto proctoring can meet the requirements of any medium-stakes large-scale examination. From stringent monitoring, real-time tracking, to ease of exam evaluation, auto proctoring offers unmatched efficiencies. Auto proctoring enables instant report generation that is ready-to-use for further action. Subsequently, auto proctoring's quality assurance and improved accuracy, without compromising the score or integrity, significantly reduce the burden on assessors.



Lower margins for errors:

To err is human. But for a machine? According to an individual innovation report, "Artificial intelligence has a margin of error of 3 percent; humans, 5 percent," but a machine's ability to solve problems and maximize efficiencies is beyond human capacity. Auto proctoring cannot replace humans. The AI makes its work more coherently by sharing accurate predictions, measurable performance and data-backed insights. It doesn't get tired or make careless mistakes while delivering on the massive responsibilities it entails. Hence, it is morally trained to perform transparently and validate its detections, reducing the margin for errors.



Elimination of on-screen cheating:

AI embedded auto proctoring test provides examiners with an exceptional advantage like no other- a limited navigation control feature to prevent on-screen cheating. Students' test screens get locked once they begin their online proctored exam. This lockdown mode prevents them from opening new browser tabs/incognito tabs/windows. It blocks functions such as copying/pasting, restricts keys such as Alt+Tab/ Cmd+Tab/ 3-finger swipe. Auto proctoring also prevents access to secondary devices, such as cables, hard drives or external devices such as the USB or internet dongle, during the exam. If students have already synced any such device before the test or attempt to sync them during the test, the AI will either not commence the test or immediately terminate it and log out the student. The disabled external ports also prevent bypassing or illegal booting.



Easy, anytime activation:

Using the world's most popular learning management systems (LMSs), such as Moodle, Blackboard or Canvas or a personal legacy LMS? Auto proctoring can be easily configured with any platform or system. The proctoring feature can be initiated by installing a proctoring extension on your browser, allowing the examiners to schedule an auto proctoring mode without compromising the quality or functionality. No human presence is involved in supervision.



Customizable anti-cheating logics:

Auto proctoring can be easily customized to meet various online testing needs. Depending on the exam levels' authenticity, custom settings are enabled at the examiners' request. At a fundamental level, for exams such as a test quiz or a subject test, one can record the exam screen in real-time via a webcam while the AI measures students' actions. The test environment will be different if you take it a notch higher, say for an online certification examination. The examiner can ask the proctoring service provider to add more logic for stricter cheating detection.



Cost-saving with no infrastructural or logistical requirements:

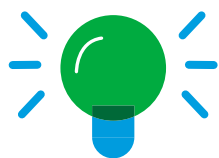
AI-enabled proctoring eliminates the resource-intensive task of setting up physical exam centers, exponentially reducing the expenses incurred in setting up exam-related infrastructure. Auto proctoring does away with the need for human intervention, saving the cost of hiring proctors.

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How Mercer | Mettl's auto proctoring feature is a class apart

Mercer | Mettl's next-generation auto proctoring technologies lend fairness, ethics and progressiveness to a myriad of online exams by negating the possibility of malpractices. It is transforming the operation of an examination system, from automating work, to increasing scale, effectiveness and accuracy in measuring exams and assessments. Mercer | Mettl's auto proctoring technology is robust enough to simultaneously support multiple exam-takers, across various locations globally, with bandwidth as low as 512kbps. Its ability to create the technology that mimics human abilities and improves their understanding transcends any other service provider on the market.



Considering different user requirements, Mercer | Mettl provides examiners with a dedicated admin dashboard for detailed analytics, including event logs and recording details for their auto proctoring requirements.

Here are some other notable features that set Mercer | Mettl's next-generation auto proctoring technology apart:

A futuristic AI algorithm:

Mercer | Mettl's auto proctoring algorithm is trained with more than 2.8 million online proctored exams and assessments. It detects up to 18 dynamic digressions with over 95 percent accuracy. Its intelligent algorithm is configured to flag various suspicious cases, such as the non-visibility of face/ presence, detection of mobile phone, presence of an additional person, a distracted eye movement, and much more, to eliminate the most glaring vulnerabilities with a dynamic set of anti-cheating features.

Unmatched scalability:

Mercer | Mettl has conducted 150,000 assessments in a day – 70 percent of them proctored remotely using an AI-based algorithm. The robust technology has a proven track record of delivering results at all levels. Most recently, it accomplished a noteworthy feat of conducting over one lakh proctored assessments in a day, along with hosting multiple universities and students simultaneously. Its impressive load testing data further showcases its volume proficiency. In a 60-minute time slot, the company successfully hosted a pool of 1000 candidates joining simultaneously, every minute of the hour.

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Prompt customer service:

Digitally-savvy individuals are relatively particular about customer service and expect immediate resolution of concerns. This is why Mercer | Mettl's prompt customer service personnel enable every client to extract maximum value.

Its world-class, 24/7 customer relations support piques clients' interest as it efficiently responds to queries and details the product offerings. Its troubleshooting skills concerning a user or a technical bug is impressive, enhancing the overall user experience. The team's uninterrupted and prompt high-quality assistance is renowned across time zones.

Credibility:

Academic integrity during any level of assessment is Mercer | Mettl's utmost priority. This is validated by its prestigious educational partnerships with renowned institutes across the globe. The likes of Cambridge Assessment, Christ University Bangalore, IIM Bangalore, The Washington Center (The USA), Jordan Hospital (The Middle East), EBZ Business School, Germany have leveraged auto proctoring to maintain their academic schedules.

Robust security protocols:

Data breach, security hazards and privacy risks are global concerns. Such issues prompt a sharper focus on regulations such as Europe's General Data Protection Regulation (GDPR) and ISO certification to strengthen data privacy. The auto proctoring system follows a stringent security protocol to safeguard both test-takers' and clients' data. It is hosted on Amazon Web Services (AWS), a highly secure cloud platform for storage and computation. It uses HTTPS (256 bit SSL encryption) for secure data transmission while ensuring the safety and encryption of all data available with it. From enabling multi-factor authentication to ensuring that the right person is logging onto the correct account, to laying clear guidelines on who can view and access the various system resources, Mercer | Mettl is exceptionally particular about security.

- **AWS Hosting-** Amazon Web Services (AWS) a highly secure cloud platform for storage and computation of data. It ensures all candidate and client information, including Personal Information, resides are encrypted and safe.
- **Data In Transit-** Data exchanged is secured & encrypted via HTTPS (256 bit SSL encryption). TLS1.2 version and latest ciphers are enabled to support secure transmission.
- **MFA-** Multi factor Authentication adds an extra level of security to the login mechanism. It ensures that only correct and authorized users are able to login into the Mettl account.
- **Access Right Management-** We support creation of various roles with defined access rights, log reports and audit trail. Access are allocated with least privilege rule to avoid any unauthorized data disclosure.
- **GDPR-** Our policies & processes ensure adherence to GDPR principles of Data Minimization, Data Subject Rights & Data Management (Storage and Security, Retention, Breach Management). Review of the policies & processes is done at least once a year or if there is a change required as per regulation.
- **ISO 27001-** We are compliant to ISO27001:2013. along with AWS CloudWatch and a In-house ELK program. For vulnerability assessment, we have device and network level threat assessment program along with Web Application Penetration testing.

Cost-effective offerings:

Mercer | Mettl's online proctoring services are efficient, time-saving and tailor-made, based on clients' budgetary allocation. An auto-proctored online test system is readily accessible and affordable for all high, medium, and low-stakes exams. However, customer satisfaction always takes precedence. Therefore, one of Mercer | Mettl's best practices involves offering a free product trial to determine its effectiveness and usability before employing its online proctoring software.

About us

At Mercer | Mettl, our mission is to enable organizations to make better people decisions across two key areas: acquisition and development. Since our inception in 2010, we have partnered with more than 4,000 corporates, 31 sector skills councils/government departments and 15+ educational institutions across more than 90 countries.

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🌐 www.mettl.com

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