



S'MORE

AN INNOVATIVE CLIENT SUCCESS STORY

Upending the online dating industry: S'More partners with AWS and Innovative Solutions

Using Amazon Recognition and AWS Machine Learning to make online dating safer.

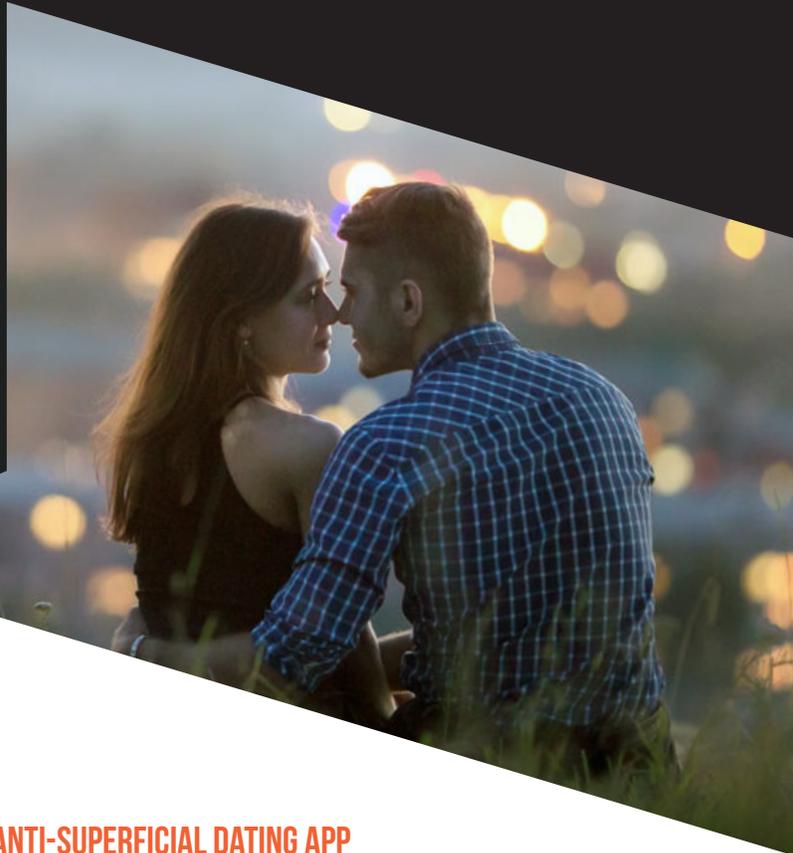


PREMIER
CONSULTING
PARTNER

““

I WOULD RECOMMEND INNOVATIVE SOLUTIONS TO ANYONE. They offer a lot of great talent, a lot of great solutions, and they are great to work with. This was our first project with them, and we are hopeful that we will have future projects with them.

Adam Cohen-Aslatei
Founder and CEO, S'More



S'MORE WORLD'S FIRST ANTI-SUPERFICIAL DATING APP

People who are actively seeking to date or find a relationship have come to rely on technology – online dating sites – to try to find someone. If you are looking for a meaningful interaction, “swiping” falls short. For instance, it takes about 1,000 image swipes on a dating site to get one date. That one date will last only 1.8 hours and often leads only to disappointment. It's a highly inefficient, superficial, and impersonal way to find a true long-term connection.

According to Psychology Today, 1 out of 4 women and 1 out of 3 men have admitted to “catfishing,” the process of luring someone into a relationship by means of a fictional online persona. That puts people at risk and, as Adam Cohen-Aslatei Founder & CEO of S'More sees it as a big business opportunity. S'More is the world's first anti-superficial dating app that is focused on creating a safe and inclusive way to build meaningful relationships using the latest technology.

The Problem of Scaling

Adam is no newcomer to the online dating industry, having developed his first dating app in 2008 while at Harvard grad school. He wanted S'More to be 100% "Catfish Proof", creating a safe and real place for people to meet and interact. S'More first developed the dating app in-house with a limited image recognition feature using a third-party solution.

"AWS has some really amazing technologies that start-ups like S'More can easily take advantage of to quickly and cost efficiently scale their businesses. In addition to Rekognition, S'More uses Elastic Compute Cloud (Amazon EC2), which allows the company to scale its computing resources along with the growth of its community.

Adam Cohen-Aslatei, Founder and CEO at S'More



In less than 18 months out of Beta, S'More grew to more than 250,000 users. As S'More started to add users and the business began to grow, it got very expensive, very quickly with services that were always "on." S'More wanted an option that would allow the app to use a different more scalable service in real time. Amazon Web Services (AWS) fit the bill with its on-demand model. During the onboarding process at AWS, S'More's AWS account manager recommended working with Innovative Solutions, one of their AWS Premier Consulting Partners.

The Partner Solution

Moving S'More to AWS was key to scaling the business, deploying AWS Lambda allowed the app to run code without provisioning or managing servers. Furthermore, combining the facial recognition technology of Rekognition with Amazon DynamoDB and AWS Machine Learning



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has achieved real authentication, better than any other dating app on the market. To further shield the user from bad actors, Innovative Solutions included category detection which is so sophisticated that it can detect and screen for hate crime or explicit content in the frame of an image. Furthermore, the technology being deployed by Innovative serves as an automatic moderator and can defend against overly suggestive clothing and explicit nudity. It is the kind of technology that will change the industry.



For us, data safety and security are of the utmost importance... most dating apps do a horrible job of protecting user data.

Adam Cohen-Aslatei
Founder and CEO, S'More

CORE AWS SERVICES USED



amazon Rekognition



amazon
DynamoDB



Amazon EC2



AWS Lambda

Innovative Solutions developed a custom API functionality and combined a handful of services, based on a reference implementation provided by AWS. As part of the app's onboarding process, the user uploads multiple photos, then facial recognition is performed to verify that the people in the photos match each other, confirming the identity of the one unique individual. AWS maintains a library of celebrity images and uses that library to reference against celebrity photos being uploaded to a profile. It also goes through a checklist of blacklisted faces which have been commonly used to catfish in the past. These are faces they see used repeatedly. Innovative has developed a way to verify against that ever-expanding library of faces during the onboarding process.



Before AWS, it was challenging for S'More to re-verify users with a 3D selfie if they changed their profile photo - the technology they had made the process rather clunky, confusing, and cost-inefficient.

Justin Copie
Owner and CEO, Innovative Solutions



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How it works

During the user onboarding process, S'More sought to leverage a form of biometric detection known as "Liveness." Innovative Solutions was able to incorporate Amazon Rekognition into the solution. Liveness detection is not a built-in capability of Amazon Rekognition but the engineers at Innovative used the capability of Amazon Rekognition to implement liveness detection, both on the client side in the native IOS app, as well as validating it and doing some additional checks on the server side.

As S'More users are being onboarded, they are guided by the IOS app with prompts that rely on Innovative Solutions' application of Amazon Rekognition. The first screen asks you to move your face into a blue bounding box rectangle. As soon as the IOS facial detection capabilities recognizes that your face is in that rectangle, it changes color to indicate success. A new prompt



displaying a yellow box within the now rectangle asks you to move your nose there. From the beginning of this part of the onboarding process, there are screen captures being taken of the individual which are being sent to the backend. Once the nose is in the yellow box and has been confirmed, the previous screen captures are compared and validated for liveness.

If the algorithm validates liveness, then additional validation is applied, using a high-quality selfie frame taken during the first liveness test and compared to the other images the individual uploaded to their profile. Further verifications are conducted by referencing the AWS blacklist file and AWS machine learning. All those calculations are performed to verify that it really is a legitimate "live" S'More kind of person. Even though AWS has had this technology available, this is the first instance of it being applied in this unique way.

Leveraging AWS technology, the partnership of S'More and Innovative Solutions has broken new ground in online dating security. It is the hope of Adam that every other dating app takes note and follows suit in keeping their users safe. [Providing S'More users, a safe and inclusive way to create meaningful and genuine relationships is a great way to use technology for good.](#)