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The Face for Behind that Fraud: Humanizing Data

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ABSTRACT

Over $905 million in total fraud losses in 2017 & there is a human behind every record. Businesses must do all they can to protect new & existing customers. When that fails, ultimately someone has been impacted – whether it's a breach of organizational data or a theft of someone's identity to commit a crime. The Identity Theft Resource Center,

a victim assistance non-profit, aids anyone with a U.S. identity credential by providing access to the information & guidance they need – whether it's emotional or financial. The impact of the increase in data breaches, exposing over 147.4 million sensitive records from January to September 2019 alone, is astronomical. As the ITRC sees an influx of calls & live-chats, the strain on the existing resources available to assist consumers increases exponentially.

During this session, we will talk about the human element of identity theft, how ITRC has partnered with SAS to employ its AI & Analytics to maximize access to resources without impact to the operational needs. Through the implementation of its new AI-driven chatbot – the Virtual Victim Assistance Network or ViViAN - the ITRC can assist more victims in real-time by automatically responding with the right resources to get them started on their remediation plan or just need quick answers.

We will showcase the capability of the chatbot as well as other solutions that SAS has worked on to aid in the fight against identity theft & help humankind feel safer in their communities.

INTRODUCTION

WHO IS THE IDENTITY THEFT RESOURCE CENTER?

The Identity Theft Resource Center is a national non-profit established to support victims of identity crimes. Founded in 1999 as the result of one consumer's battle with agencies and organizations to resolve her identity theft case, ITRC has evolved over the last 20 years. At its core, the organization is a victim service agency; in practice, it's a consumer empowerment and education institution. The ITRC supports consumers and victims that hold a U.S.-issued identity credential (birth certificate, Social Security number, passport and/or state issued driver's license or identification card), regardless of where in the world they are located, if they have had their personally identifiable information (PII) compromised – whether they have been victimized as a result of that exposure or not. Each victim has a unique set of circumstances that doesn't have a scripted resolution. Because each consumer that contacts the ITRC needs individualized assistance, the organization employs a compassionate, knowledgeable staff to field concerns in its contact center. Every consumer that reaches the ITRC is provided that personalized help at no-cost.

Every day, the teams at the ITRC help consumers minimize their risk of exposure through education and empowerment, teaching them to take their identity security into their own hands. When a consumer crosses the threshold to a victim – through a self-compromise, data breach, or

other exposure of their PII – the contact center is available on the phone, through live-chat, by email, or snail mail to provide an empathic ear and sound advice on the steps to take for each person. That assistance isn't throttled or limited; a consumer can call one time or once a week and receive the same level of service from each advisor.

SAS AS CATALYST FOR VICTIM SERVICE GOOD

As the ITRC navigated the landscape of industry leaders that aligned with our mission (to empower and guide consumers, victims, business and government to minimize risk and mitigate the impact of identity compromise and crime), SAS continually rose to the surface. As an industry leader and a force for positive change, SAS has always looked at how it could use its position to create meaningful impacts for non-profits. Dr. Goodnight's perspective on using data and programming to further other people "doing good" was in-line with the culture and commitment that ITRC valued in a partner. Initially, SAS's #DataforGood campaign seemed like an excellent fit for all of the efforts that the ITRC was looking to launch to ensure that victims of identity crime were not being overlooked – both in how they were positioned and how they received services. As the executive team met with the teams at SAS, there was another component that was identified as a key goal for both organizations: creating meaningful, technology-driven interactions with consumers. In the ITRC's case, that meant providing a technology solution for empathetic, timely, accessible support to each person that needed assistance minimizing their potential risk of becoming a victim or those that were already in the throes of resolving their identity crime case. With every conversation between SAS and ITRC, it was obvious that there was an opportunity to do just that.

ITRC + SAS = EXPANDED SERVICE LEVELS

As the ITRC has grown and evolved, victims have come to the organization as a result of a variety of factors: as a victim of a data breach; as the result of finding some fraudulent activity on their accounts; hearing about a scam or fraud on media; as a referral from another agency or company to name a few. The ITRC staffs the contact center from 6 a.m. to 5 p.m. Pacific, Monday through Friday. Victims can engage with an advisor one-on-one during those hours, speaking to a real person that can provide much needed support. But identity crime doesn't keep bankers' hours. Many victims find out they've been impacted after-hours, weekends and holidays – leaving them without someone with whom they can speak about their situation to receive guidance. With more than 14.4 million Americans impacted in 2018, the ITRC needed to find a way to extend their reach to help those facing a daunting task when they needed it most. After feasibility studies to see if there was a solution to the challenge of having an advisor available 24/7, the ITRC concluded that it couldn't currently operate at that level.

That's where SAS and the utilization of technology play a substantial role. Previously, the ITRC had been awarded a coveted Vision 21 grant funded through the Department of Justice's Office of Victims of Crime in 2014. The grant was designed to create "real change in the role of victim services," through technology, to make services more accessible and support electronic case management. To that end, the ITRC revamped its online profile by creating an enhanced website interaction, launching a live-chat feature, and developing a mobile application for both Android and iOS platforms. As a model grantee under the previous funding, the ITRC was awarded another Vision 21 grant award in 2018.

SAS invited the ITRC to participate in SAS Analytics Experience in 2018. The ITRC's CEO, Eva Velasquez shared the unique challenges victims of identity crime have with resolving their cases and the perspectives the organization had about how technology played a role in exposure as well as resolving the issues around an identity compromise. During that time, the executive team had the privilege of chatting with one of the SAS development teams

responsible for its AI and Natural Language Studio. That was the genesis of the ITRC/SAS plan for #AIforGood and the inception of ViViAN.

VIVIAN – THE VIRTUAL VICTIM ASSISTANCE NETWORK

As part of the 2018 award, the ITRC continued to set the bar high for technology utilization in the victim services arena. They proposed an artificial intelligence chat-bot to provide after-hours support that could provide targeted, actionable information that victims of identity crime could use until a live-advisor was available to follow-up during business hours. The chat-bot would be available in the live-chat environment and provide assistance to those using the updated website regardless of when a victim reached out for assistance.

The chat-bot would be the first line of communication for those seeking help from the ITRC via the live-chat interface, allowing victims to receive information prior to reaching a live-advisor. ViViAN would also allow victims to receive immediate assistance during high-impact events where inbound traffic to the contact center can create delays in the queue for an available advisor. ViViAN could also provide actionable first steps for victims that reach the contact center after-hours so that they can begin their remediation process as soon as they received the recommended action plans.

After seeing SAS's demo of Natural Language Studio, the ITRC knew that was the solution that would bring ViViAN to life.

As it relates to ViViAN's personality, it's helpful to look at SAS Natural Language Studio's capabilities under three different headings: Natural Language Understanding, Conversation Flow, and Natural Language Generation.

TECHNICAL COMPONENTS OF VIVIAN

Natural Language Understanding

Natural Language Understanding is a specific type of natural language processing focused on mapping what a user types to a canonical representation (that's called an intent) that a chatbot like ViViAN can handle further. The reason this is necessary is, as humans using natural language, there are multiple ways to say, or ask, the same thing. For example, someone interacting with ViViAN might type, "My credit card was stolen. What should I do?" or, "What should I do if my credit card was stolen?" As a human reading both questions, it's easy to interpret them as having the same meaning, or intent. For a computer, it's more complicated.

Computers need to be taught to see these types of variations as having the same meaning. Handling this type of variation is what Natural Language Understanding does. Inside SAS Natural Language Studio, a chatbot designer building ViViAN is able to enter multiple variations of sentences (called utterances) and map them to the same intent. For example, a designer might map both of the questions above to the intent, "stolen_credit_card". Then, as conversation flow is being designed, the designer doesn't have to consider all of variable ways a user can say something, but rather focus on the core meaning.

Conversation Flow

Conversation Flow is the process of designing what ViViAN does in order to respond to the user. This is where the designer can bring ViViAN's personality to life. SAS Natural Language Studio aims to make this process easy by allowing chatbot designers to build conversation flow visually and test interactively as they go. Some conversations are very simple with a very simple, linear flow. Others may require additional interaction with a user in order to gather more details, involve branching and be a bit more complicated.

Natural Language Generation

Natural Language Generation is the technology used to give ViViAN a voice to respond – what she actually says back to a user. Natural Language Generation, as presented in SAS Natural Language Studio, takes the form of templatized text combined with various utilities (sometimes called language helpers). These tools aim to make text generation approachable to a chatbot designer. But, much of the personality of a bot (ViViAN in this case) will come to life in the actual response crafted by the designer.

In summary, SAS Natural Language Studio provides designers with three specific capabilities to build interactive chatbots. Natural Language Understanding helps us decipher what a user typed; Conversation Flow defines what is done with that knowledge; and Natural Language Generation defines how to craft responses to a user. These are the primary technical underpinnings enabled through SAS Natural Language Studio which will bring ViViAN to life.

VIVIAN AND THE SERVICE PROVIDER

ViViAN enables the ITRC to provide immediate responses to victims and consumers needing assistance. As a part of a larger engagement and response plan, ViViAN can also provide intelligence to the ITRC advisor assisting a victim. As ViViAN hands-off the user to the advisor, the records of the exchange are provided so that advisor can review what has been provided and give additional support and recommendations based on the previous conversation.

Many times there is scant information provided before a user reaches a representative about the circumstances around why that person was reaching out. With a quick review of the transcript, an advisor can more quickly assess the situation, provide clarification if needed and give more prescriptive directions on how to move forward. As a victim is likely experiencing a great deal of stress and anxiety when they begin their engagement, a quick and accurate response can alleviate some of those feelings; empowering the victim to move forward with the process of resolving their case. ViViAN is a tool for any victim service provider wanting to ensure that their victims are receiving the best possible support.

A HUMANIZING TECHNOLOGY

As identity crimes continue to grow in breadth and depth, it's important to remember that each comprised record involves a human being. The person at the other end of the string of data will likely have serious, long-lasting impacts as a result. In its 2018 Aftermath® report, 77.3 percent of the ITRC's victims reported increased levels of stress, among other non-financial impacts. The ITRC will continue to advocate for consumer-first and privacy-by-design best practices with organizations, business and others to minimize the impact to the end-user. ViViAN allows for a human experience for each victim of an identity crime. Empathy. Compassion. Support. Guidance. Immediacy.

The black-market economy around PII and other data also continues to grow; fraudsters evolve their exploits as quickly as older ones are shutdown. Detection, authentication and verification techniques continue to evolve to meet the challenge, and SAS is on the forefront of developing these to stay ahead of the bad actors. What does that look like? Here are a few examples:

- Real Time Data Orchestration, Scoring and Decisioning in a Software-as-a-Service offering (ID:EA)

- Creating cutting-edge new account verification to make available to the broader market. The ability to retrieve a broad set of information about an applicant helps clients make a better decision on if the applicant is a real person and if the identity presented actually

belongs to the that person.

- Integration into the Social Security Administration's e-Consent based Social Security number Verification

- Allowing clients to verify to whom a presented SSN belongs and then match it to the applicant's data. A key tool in reducing synthetic identities.

- Enhanced real time network analysis allowing visibility in how the current application fits into a broader array of potential malicious networks (Device, PII, Telephony, etc.)

- Mathematical techniques that will help track identity theft rings, their behaviors and methods of operation. Additionally, this will allow institutions to work more closely with law enforcement.

- Clustering to sort out good behaviors from marginal edge cases where the fraudsters try to hide

- Cutting-edge machine learning to identify unseen behaviors that could indicate fraud attempts. The more a crook tries to hide, the more these machine learning tools can help.

CONCLUSION

VIVIAN – READY FOR SYNDICATION

The initial goal for ViViAN is to provide improved access to resolution advice for victims of identity crime through its use on the ITRC website idtheftcenter.org. As ViViAN moves through the development cycle to completion, the ITRC intends to embed the same capabilities within websites of other victim services organizations, businesses and government agencies so victims can receive real-time assistance on identity crime – backed with highly trained, knowledgeable, empathetic advisors. As part of the ITRC's commitment to provide resources to the field, and through the learnings of this development process, ViViAN can become the model for other victim service providers. The ITRC and SAS are proud to partner together to bring this technology to life and provide better assistance to those who need it most.

CONTACT INFORMATION

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