# Svetlana Gubin - The Power of Math

**Mindy:** [00:00:00] Welcome to Analyst Talk with Jason Elder. It's like coffee with an analyst, or it could be whiskey with an analyst, reading a spreadsheet, linking crime events, identifying a series, and getting the latest scoop on association news and training. So please don't beat that analyst and join us as we define the law enforcement analysis profession, one episode at a time.

Thank

**Jason:** you for joining me. I hope many aspects of your life are progressing. My name is Jason Elder, and today our guest has four years of law enforcement analysis. experience. She is the business analyst 2 for Oakland Police Department in California. She holds both a bachelor's degree and a master's of science degree in statistics, as well as a bachelor's in administration and criminal justice.

Here to talk about, among other things, data Svetlana Gubin. Svetlana, how are we doing?

Svetlana: We're doing good. Great. Thank you.

**Jason:** As I said, I practiced that name. I was hoping I'd get it. And [00:01:00] sometimes I get it just right. And other times I butcher it even after practicing for a while.

So I'm glad I nailed it today.

Svetlana: You did a great job. Yes. Thank you.

Jason: , how's things in California?

**Svetlana:** It's good. It's still warm. Uhhuh, and no fires today. Mm-Hmm. . So we have a great air and fresh air. Yeah,

**Jason:** its good. That is, that is something that's been going on all over the country this summer with you.

You know, you have that out there in California and then all that stuff with Canada. Yeah. And the air quality up in the northeast. . So, all right. Well, I'm

glad things, are clean and bright over there in California. So let's go back how did you discover the law enforcement analysis

Svetlana: profession?

Actually, it was like a chain of events and meeting with different people. So when I grew up, I had no computer, have no idea what analysis itself and how it's happened. So I was very far from it, [00:02:00] but I was always had this idea to work in police to help and assist with investigation. So I wasn't even prepared to be enrolled in university to be, a on a criminalist to work in a lab, but life changed and I changed my plans and everything turned in 17 years ago, I moved to United States. Then I became American citizen and I started looking what else I can do after I figured out how to speak in English. Because when I came, I didn't. Speak at all in English.

Oh, wow. So I just knew like, my name is Svetlana and I'm from Soviet Union. Oh, wow. So

Jason: then, what helped you learn English?

**Svetlana:** I noticed that my kids go to school and spent like a [00:03:00] half of the day in in just in school, not like in a special programs. Just listen, their peers around taking different classes, camps.

So I decided, okay, I have a half of the day. Why don't just go some schools and spend time between among the people who speak English. So, and I enrolled in local college and I started taking. Whatever classes were available because it was very cheap at this moment and it was easy to enroll. So I took Spanish classes, math, accounting because it was easy for me.

I had this experience before. And I started to take some theater classes everything where I can just extend my vocabulary and practice and write and read it. So I was kind of successful and helped me a lot.

**Jason:** So. At the time when you come over to the United States, did you only know [00:04:00] Russian or did you know other

Svetlana: languages as well?

I studied English in school, but it was very limited. No practice. I remember some grammar, something, but it was like so long time ago. Actually where I... Born and grew up people spoke a different language. So in my family, we spoke Russian because it was like mixed international family. buT people outside spoke Ukrainian.

So, yeah. So I grew up like simultaneously in two languages because TV, radio in store everywhere was the second language. Yeah.

Jason: What area of

**Svetlana:** Russia did you grow up in? It was not Russia, it was the Soviet Union. So I was born now, it's called Ukraine. Oh, okay. So, and my parents from Ukraine, yes.

Oh, okay. But then we became, because we were in Russia when it splitted, so we became Russian citizens. But my heart still [00:05:00] is Ukraine.

**Jason:** Oh, man. So that's geez, that's a personal connection there with all that's going on with Ukraine and Russia at

**Svetlana:** the moment. Yes. Yes, so it's a difficult topic, and it's probably a different story.

Okay. All right. And try to be optimistic.

**Jason:** Yeah. Hopefully it gets resolved soon. Okay. After you learn English, then, what's the next step in your process of becoming an

**Svetlana:** analyst? So my next step was I decided to try take some classes for, from criminal justice because I decided, okay, now I enough understand English language and now it's good to know local law.

You know, and I took two classes, introduction to criminal justice and the California criminal law. And I was so excited because the professors there actually lieutenants and captains [00:06:00] in law enforcement. They were so interesting people and they provide very interesting classes. And compared to my other classes, it was very strict, like 30 questions, 30 minutes to answer compared to economics, like 20 questions in one hour.

You know, like it was very strict, very organized classes and. Like involved and it looks like people actually feel about what they teach and it's very interesting. So after this two classes, I completely switched my directions because I was almost graduated with accounting major I ended up community college and I started over. I started to take all classes. I decided, okay, maybe I can back to my dream to became in the work in crime lab. So I started to take classes and I was, I got a chance to work in crime lab. And I saw [00:07:00] everything they doing and I realized the chemistry is still very tough subject and I can't do it now.

Chemistry was worse than it was before. And I started talking to my lab because my manager, she told me somehow I have to finish college. I can't stick forever. I need to move. I said, okay, I need just a couple of weeks to figure it out, and I started talking to people, and some of them, I don't remember who exactly, they told me, oh there is a field not in the crime lab, but you still can analyze information and assist in an investigation, so it's a crime analyst, and we have them.

You can talk to Michael Voss, he can help you. Maybe he can take you as an intern instead of working in the lab, you will work with him. I said, okay, it's cool. I started to investigate what this about who is crime analyst. I said, okay, it's very, very [00:08:00] cool and very interesting. I talked to Michael Voss who was a crime analyst in Sheriff's office of Contra Costa.

And he told me we just took an intern, but I know place where. They have an alias, but they're looking for in turn. I said, cool. So I called to Michael Rainey who visited your podcast and gave it to you. And he, he took me. So, yeah, so I started finishing my college degree. I enrolled in, this training in Sacramento University that at that moment, they were certified by DOJ office in California. Now it's not certified training anymore, but I was lucky to be certified, did my 400 hours with Michael transferred to. University and instead of forensic science, I transferred to criminal justice and then [00:09:00] being in criminal justice it's a Hayward University.

They told me everyone have to have Major and a minor because they don't have enough classes. You have enough classes, but you still can take minor. And I was thinking which minor I can take that will support and help me to work as a analytics. And I found out statistics. I came to statistics department and I talked to, was a counselor for bachelor's degree.

And he told me, who cares about minor? You need, you need a major, but I don't have enough math classes. Oh, he said, it will be easy. You will take it. You're from Soviet Union. You know math well, no problem. I said, okay. I went to chair department and I talked to him. And I said but I'm from criminal justice.

We don't have math classes. I don't know how to substitute some classes [00:10:00] because I have to completely start over again. He told me you can try some of them. But I will substitute you. We will figure out if anyone tell you anything, let them know. I allowed you to be enrolled in our must bachelor program in statistics as a major.

So, okay, so it's took me total three years. And I finished with two bachelor degree as a two majors, not the minors. Yeah. It was very interesting because what I did, all my project and statistics, I, I used open sources or from permission from my department data sets and then analyze them in statistical way.

So more. Like deeper and there's more interesting results and outcomes in my classes. So, and the Michael was very, he was very like intrigue [00:11:00] every time. And I bring like 20 pages from my analytical class, then this is results, very lots of pages from calculations. I said, yeah, it's too tough.

Yeah, but you can read only conclusions. You don't need to read everything else. And the conclusions is most interesting stuff. And yeah, it's helped me a lot to look differently, to analyze information differently, and when I almost graduate, my counselor in a bachelor's degree she told me you're so good at statistics, you need to stay for our master's program.

Jason: They don't want to let you

**Svetlana:** go, do they? Yeah, like it's a joke. No, you, because one of my professors who, Eric Hughes, who actually Became, like a mentor. He provide lots of visualization classes in the practical classes. You know he started to use samples from criminal justice as well. And he [00:12:00] told me before me, no one actually consider it seriously criminal justice.

Because it's not enough data it's something unclear, but my passion in this field and so give them ideas that may be to try to see what's going on in the criminal justice is any interesting projects, analytical tools, stuff, how people use it and analyze it. And he find out lots of interesting projects he shared with us, especially from New York.

Because they have a big department, so they actually use Python to create projects. And some other people just use open sources and analyze crime too. And it's very interesting how they do it. Even techniques and the tools, just to visualize it without... Special software. Yeah, so I took two more years and finally I was graduated with master's [00:13:00] degree in statistics.

Yes. And focusing and in data science. Yes. So I'm glad that so many people a little bit forced me to do small extra steps that actually bring me to where I am now. And I appreciate all this. everyone who I met on my way to, to this profession. So this is how I discovered it and how I get in.

And yeah. Yeah. So

Jason: did anybody try to talk to you into a PhD?

**Svetlana:** We discussed this question. My school does not have it. So, but I have discussed it with my some professors in statistics and criminal justice. Yes, so they gave me some advice. So practically now I just collect information and collect ideas.

That I want to develop and I talk some schools that planning to do it remotely in a couple of [00:14:00] years. So maybe I will join them because I don't want to drop my work right now. So I wants to stay working, but most PhD programs required to be full time enrolled and I'm not ready yet. Yeah,

Jason: I find it impressive because you talked about chemistry.

I, I can't, I mean, chemistry was hard enough for me in English. I can't imagine trying to do it in a second language, trying to learn it. So it's certainly impressive, which what you were able to accomplish

now, with the stats, , did you always find that math came easy to you? Do you consider yourself good at math?

**Svetlana:** Yes, I always liked it in school and in high school I was very good at math. Maybe not so advanced like some advanced people. But in, because my, in Soviet Union we had a, Two different type of schools general [00:15:00] one and specialized one.

So in general school, I was on top in math, chemistry, and every subject. Yeah, but compared to people in specialized school, I might be being somewhere at the bottom of the line. Yeah, because yes, many people notice that Soviet Union education is Especially old one style is much different than in United States, especially in a level of high school.

Yeah. So when I took, for example, here test for college, I passed two years of college right away. Oh, okay. And when they told me, Oh, you're from Soviet Union. It's understandable. Yeah, because we have montadori requirements for

algebra. I had a four year, four or five years chemistry, biology, zoology, anatomy, analysis, statistics, everything in high school before I graduated.[00:16:00]

So it's very high education, even in high school. And then it's go to university. Here it's a little bit different. Yeah, it's more advanced in universities than in high school. Yeah, but this has helped me even without English because I understand idea, you know then I just learn practically how it's named in English.

But I knew how to solve integral integration, how to take a square roots I don't need to teach myself how to do it. I just need to know how it look like and how it's named in a different language, not just English. Yeah, so it was not so hard for me. All

Jason: right. And so let's get into the internship then.

What, tasks were you doing as an intern? I was

**Svetlana:** lucky or maybe I was too good. So Michael, yeah, because after a couple of weeks, I [00:17:00] realized that Michael dedicated to me some of his routine project. So very easily I became from just in turn, I practically was like employee. So I just was not paid, but I did a regular routine job.

So I had my task every single day. I have to came to do a project reports for chief for meetings. So, and just at the end, he can. Check and release it and sometimes he told me you have to present it. I said why because Because you did it. It doesn't matter you in turn you actually work like you employ and it's a great attitude For what you do and yeah, and of course I optimized some project for you That was an Excel, so I make it more efficient and easy.

Yeah. So, and my task was I did every week I did [00:18:00] like he was talking that we enter information from general RMS to our local system. So I entered this, if a volunteer didn't have enough time, I analyzed weekly monthly burglary robberies. that happened in Concord. I did um, UCR report. So I collected all the information from different sources.

And before it was released to FBR, FBI, and If anything happened, so Michael asked me, like, collect information and present it as a project and reports. And I did geographical mapping, so I had to study it on my way. Practically, I study everything on the fly. He told me, you need to do this. I said, okay, yes.

And I go listen, looking how it's working, reading online lectures [00:19:00] and doing. Thank you. So yeah. And what's the most important for me and it probably helped me a lot in the future. He brought me to our Bay Area Community of Crime Analysts. Oh, the association. Yes, so he actually treats me not like some intern.

He treats me as employee, as a crime analyst, and a valuable person. So, yeah being intern, everyone in Bay Area they knew me. And all my project in school, I I was trying to bring to meetings to show what we can do if we do a little bit extra steps for analyzing our data, and I presented some cases during the meeting.

So for me, it was very big step and the big duties that Michael allowed me to do. Yeah, I'm very appreciate him. Yeah,

**Jason:** so in terms of [00:20:00] like the robberies and burglaries that you worked on, are you trying to identify patterns and trends out of the data to then present?

**Svetlana:** Yes, of course. So my task was not just analyze how many were, but to try to find any patterns, if it's possible, to see if any combinations.

This is why I started to do geographics because it was easy to me to see if any is the same day of week. And the same locations or how they're moving, how it's happened. We didn't have a lot, like it was maybe five or 10 in a month. So it's hard to see any patterns because it more look like random.

So like random people doing random stuff. And yeah, but it was not just about what area more affected. So yeah, of course. And then based on the report I created it's called bulletins and it was [00:21:00] presented for patrol before they go on their lane up when they go to to, to work. Yeah. Yeah.

**Jason:** Now, was there any particular pattern and trend that you can remember that you identified in the data?

**Svetlana:** No, I don't remember anything specific, but as I mentioned, I just mentioned it was more specific, like area where it was more likely happened and it's more likely it was by people who know each other or leave.

Close by because it was small communities where people rent houses have houses without land. And some areas where apartments building. So probably we had some ideas that people share information, share about information about each other. And they know who bought like TV or some expense cell phone.

And while he or she at work, this apartment was burglarized. [00:22:00] Yeah. So it's kind of like this. Yeah. So when you presented to the

#### Jason: officers,

That's a pretty big step too. It's one thing to be working on the data, but it's a whole other thing to actually take the data and then present in front of. A group of officers, and especially with some of the officers. I don't I don't know how deep you got in terms of technical analysis or any statistical test that you ran, but

was that well received? Did you have maybe trouble at first communicating with the officers?

**Svetlana:** I don't remember any tough situations. It was because Michael created very positive attitude. People started believe him and always come and ask, Could you help me? Could you look on this several cases? Is anything common?

So in the CID Criminal Investigation Department division it [00:23:00] was no problem at all. These officers, I actually didn't had any issue present because honestly, I used to be a tax lawyer and I, I work with court to defend companies who wrongdoing with taxes. Home back. Yeah. So I had a big experience to be among the people present in the public and I had a training experience.

So I trained the counters before. So I had kind of like experiences before I always had concern about my pronunciation. But because I can't do anything with that. I moved when I was adults and it's practically stay forever with me. I just decided, okay, this is what I have. Yeah, so I don't remember any particular like tough situations.

Because, I don't know, for some reasons [00:24:00] people believe me, even in now where I work in Auckland, people trust me and believe in what I am telling them that I checked before I tell them and I always have supported explanation. Why? And of course, I don't try to go deep in technical details unless people ask me, like once I was asked why I did everything it was advised, but we didn't catch anyone and I had to explain that if we divide number of cases by how many days a week we have, how many hours, minutes and seconds. Unfortunately, probability is too low and yes, it's highly likely like something happened on Tuesday morning, but just highly likely and chances still very small if it's just three events.

And we [00:25:00] can't wish more crimes. It's not a good idea. We wish more data, but we don't want to more crimes.

**Jason:** So you mentioned when you presented to the association. Then that you recommended some extra steps to them. What were some of those extra steps that you recommended? It's

Svetlana: not like I, like I recommended do this, but I showed them what they can use.

Like, for example we, one of my project was we analyzed how many days. happened between car was stolen and then recovered. And then most of the time when we study criminal justice and take any crime analysis trainings, the classes, we would short normal distribution like everything happened in the middle, like simple explanation.

Yes. [00:26:00] But it's not. All the time case, even if you have more incidents, like traditionally, if you have more incidents, more cases, like if you have more people, we can calculate average height and the tendency, we, everyone is towards to average, but sometimes. And what I study in statistics classes doesn't matter how many like people you count or how many incidents you count, you will not have tendency to have something in the middle.

And when I analyzed stolen and recovered cars. How many days? It was clearly noticeable that this is not a normal distribution, so it's not distributed normally and nothing happened in the middle because majority cars were recovered the same day or like up to five days you recovered [00:27:00] approximately 70 percent of them.

And the rest of them, like 30 percent will be spread far, far, like even we found car after one year. So it means when you draw this distribution on the paper, like easily how many days and how many cars, you will see that it's not a bell curve. It's a little bit, it goes from up. And going down it's called exponential.

So it means it's have to be completely different calculation for average, for a confidence interval for everything, because your first important days, it's the first three, four days, not middle, like sometimes somewhere in like 15, 20 days. So, and I presented this as a view that sometimes we can't do what we study.

We need to be more open to additional information, additional possibilities. We need [00:28:00] research more. Like do something more about what's going on. And actually crimes, majority of crimes happened on Poisson distribution. I don't want to stress you with complicated words. So it's distributed differently.

So it means we have mostly events in one day in one, once had tendency, have a less incidents. Then more incidents not somewhere in the middle. So if your agency has every day from three incidents to 15, it's not somewhere in the middle. You majority days will be with three incidents. I say this smaller number and then go up and, and then you'll have your outliers.

Yes. Yeah, and you have to completely different to do calculations and provide where you actually have to be. So you have more days in a month with three incidents than with 15. But if you put them [00:29:00] together, divide, you will be somewhere in the middle, like 10, 12, maybe 8 and it's not even close.

For what you have to do, or I remember when we calculated what's happened. If you have a small numbers, your confidence interval became on a low level goes to minus. And I was, I was like, what's to do? And I was told, Oh, just drop it. And in school, when I finished my master degree, I realized it's just wrong because we can't have events minus, so it means we use the wrong model.

It's have to be completely something different. We can't just drop confidence interval so we need calculated differently where our results will be from zero to something not from minus two minus two to two. It have to be from zero to two. When we calculate it. So yeah, I started to do it a little bit different [00:30:00] and for myself to prove it.

So, and I share it with my peers. So if you would like, you can use it too, but if not, unfortunately I can force, but my mission is to show people because no one shows this, no one tell about this like when I read all books, even advanced criminal justice, they always talk about simple. Methods how to calculate.

But now we have computers it's much easier to do any calculations. It don't have to be so stressful or tough.

**Laura:** I am Laura Weaver and my pet peeve is to... smile when people do not smile back. Just be kind and everybody's world is very busy. Sometimes we are not very happy, but take some time out of your day to smile at a stranger because you never know what they're going through.

**Carlena:** Hi, this is Dr. [00:31:00] Carlina Orozco from the Tempe Police Department, Arizona State University, and my public service announcement is that correlation Does not equal causation.

**Svetlana:** If you find that certain things are occurring that may be contributing to a decrease or an increase in crime, for example, that gives an opportunity to investigate it a little bit further to see if possibly there are things contributing, but it does not mean that one thing caused the decline or the increase.

It just means that there's an opportunity to explore it a little bit further.

**Jason:** So, we'll just stay with the example of stolen vehicle recoveries like you mentioned. So, in this example then, when you're analyzing the data between stolen and recovered, and, and then you're [00:32:00] running the statistical test, it has to reach A certain confidence interval in order for you to recommend an action for it to be usable is, is that my understanding?

Yeah, yes. Okay. And is there a certain confidence interval that you threshold that number that you have in mind, or it's you, you kind of, it's the, the data drives that, that threshold.

**Svetlana:** As as I remember from research I did. So it was like three days is like in the first two days it was maximum. Mm-Hmm.

Then third, fourth goes down after five or seven days. Probability became so low, it doesn't mean we don't have to look for Mm-Hmm. People need to understand, like, victims that if their car found in the first seven days, they're lucky, and it's probably just was used, and explain, for example, for what [00:33:00] reason it was used, in a car, in Congress, it was more like a joint ride.

Because there are no bars between Concord and Antioch and the guys, young guys, they took a car and go to Antioch. So it means what type of crime or for what reasons they did it? Because cars that were stolen. And we can't find them or don't see them long in period time. It means they're highly likely goes to either two different locations, like we found a couple of them in Los Angeles.

Or they go to a chop shop. So this car is, was destroyed. So it's not just statistics. How many days, what we can do it. It's explained what for what reason for how this car was used. And if we can see, if we, if we got, for example, a different results, like recovered cars goes much farther or number [00:34:00] of recovered car became much smaller then we have, it means cars

not used for next crimes or for ride and then not dropped, they just disappeared somewhere, but because we recovered very high percentage.

Almost like 70 percent in seven days. It means the car stay here. So it's not just help calculate confidence intervals that mostly don't need it for officers, but it explains, and we can think about why. It's short period what happened with this car is this short period because if we get Like in a different distribution and only like 30 were recovered We would think about different.

Usage of this car and explanation Why they use car and for what reason? So this has helped me being statistician. It's not just statistics, but how we can apply it [00:35:00] for analysis. This is why when I was in school with statistics, we had several directions. We can choose data science, archivarios.

And theoretical mathematical direction. So I choose practical one, data analysis, to see more. So we were more talking about, not about formulas, not how calculate, but how to interpret your data, how to interpret your results we got.

**Jason:** So this brings us to your analyst badge story, and for those that may be new to the show, the analyst badge story is the career defining case or project, and so for you, you're still interning, and it's 2016, and you are working on A bank robbery series with

**Svetlana:** Michael. Yes. Yes. It was very interesting case because I just started and this so intricate case happened on my eyes.

The guy later, he was called bearded bandit because he [00:36:00] had a beard and he robbed from 10 to 11 banks in California between Sacramento Bay area and going to Gilroy. And he used now it's publicly available information. It's no secret right now. So he used, he had not just birch and he never used firearm.

He was smart enough to understand later. He told, he did research. So if he doesn't use firearm, he will, if he caught, he will get less punishment because it will be, yeah, no firearm. It's less severe crime than robbery. This using firearm. So he didn't use firearm don't present on a simulated, but he provide notice like give me your money.

And sometimes when he saw like clerk became like trying to look around, happen something, he just run away and don't take any money. [00:37:00] So he is the cage was not so much big. But a mount and a speed, he started like once in a while, but then it's became several times a week and then several times a day.

And what helped him, he used black Mustang. So very speedy car. And this helped him to drive faster from location to location. But this was noticed by people. Citizens who was in bank or around bank said this guy every time use the same car. Mm-Hmm, . And he was birded. He dressed differently every time.

It looks like he had bunch of t-shirts, different ones in his car. And then. He didn't hide his face. Nothing happened, yeah. So he just started make it so open. And at one time, he was in Brandwood. He didn't actually rob bank in Brandwood, [00:38:00] but people noticed him in the pharmacy and called police.

And the police, what they did, good, smart job. The officers, they found the car, black Mustang on a parking lot. And started to wait him around. And this guy, he shaved his head and removed beard. So he was not recognizable now the same way. But because he came to this car that only one black Mustang, he was arrested.

And he, because the closest city in the way he robbed the bank was conquered and he was brought in our station and jail. And then FBI show up and took him. So my participation in this project was Michael, my manager. So he called in different places and banks to collect information and ask [00:39:00] me to create a matrix about his movements.

make a timeline, places, how much money, how he was looked in each place, what notice he provided. So everything about cases. And we find out that we had more cases than FBI had, because some bank did not notify FBI. Yeah, so, and when, it was before he was caught. So we had a meeting to join with FBI in the banks.

So, and Michael told me I have to present my matrix because I did it. I joined all information and I presented it for this joint task force. And in a couple of weeks he was cut because one of the city finally make it publicly available information and one of the citizen in brand would help notice him and help to find out his car [00:40:00] and him and stop him.

Yeah. And based on my prediction, this guy's was just recently fired. He lost his job. He didn't know what to do, but he was smart enough to do some research to get low punishment. As I know, he got just 45 months because he didn't use firearm.

And at least he collects some money. Yeah, but it was tough situation. So it was not like guy who used to do it a long time like a criminal guy, he was actually very, very nice looking and clean like this very, yeah. Business man looking like, yeah, like a Google guys who had a tough situation in a life.

# Yes.

**Jason:** All right. So then with the data that you're analyzing and you're looking over all the incidents and you mentioned that he was picking up his pace, like he would start out with doing it not so [00:41:00] regularly. And then he was getting to the point where he's doing multiple per day. What? If any, did you see any pattern in the data that you were

## Svetlana: analyzing?

Yeah, he did it mostly in the middle of the day because when he did multiples in first of all, because it's less people in the bank, plus it's easier to drive less traffic. So middle of the day. And it looks like at the beginning, he tried he tried to do it, how it's happened, see what's happened after.

And as more he doing it, he became more confident like, I don't need hide myself. I just go and no one catch me. So why don't just go next place? Because while they figure out here, I will do it in one or two hours. So I will reached. much farther in California and find out another place because he noticed probably, and this is a big difference from like my home country, Soviet Union.[00:42:00]

The police here is not a single system. with hierarchy. Every single city is a separate, and until they figure out that the same cases happened in their location, until they find out how the suspect or victim matched each other it takes time. And it means it gives opportunity for offenders to commit crimes without worrying at some point that they will not be caged until we find out on our meetings that we have a similar cases.

And we can help each other but at this moment they moved somewhere else and it's maybe not, and we have like meetings for Bay area, we've worked together, but something happened in LA we might don't know, or even Gilroy, for us and where is Bay area. So this is kind of problem and, but it works for offenders.

Yeah.

**Jason:** [00:43:00] That's interesting. And do you know off the top of your head total, how much money he stole? Roughly?

**Svetlana:** It was like twenty five, thirty something thousand. Not too much, because sometimes he got like from zero to thousand something. Oh, gosh. Because cashier now don't have too much money. They don't keep, and as we noticed, it's easy to them to give some money.

Because insurance will cover it. This is why they don't notify FBI, don't like, because if they notify FBI it's a bank should be closed for... Amount of time until it's investigation. Yeah, because they need fingerprints. They need cameras. They need Whatever, whatever, whatever. Yeah. Yeah, I got

**Jason:** you. Well, let's move on to you becoming an analyst we're pretty far into this interview and are finally getting to you Going and becoming an analyst at oakland police department.

[00:44:00] So then what Are you doing for Oakland Police Department? Is it about the same or how just compare and contrast?

**Svetlana:** I started with the similar job as a crime analyst. Yes. And so I did like analytics. I work, I assisted patrol and investigations and people just started come to me and ask, Could you look this?

Could you help me here? We have some problem in downtown area. What do you think how we can analyze it? So it started more broad and broad. And finally I was transferred to different unit. It's called research and planning. Where I can assist not for specific crime, but more citywide and do some like dashboards and like interactive Tools that could be used to analyze crimes not just [00:45:00] analyze crime But I assist record records a unit I assist risk management So I have to analyze data to other units, not just crime now.

So to crimes, it added more other units because everyone has data and everyone needs to help to analyze them.

**Jason:** Okay. So is this when, when you transferred to research and development, is this when the, the title changed from crime analyst to business analyst too? Yes.

Svetlana: This is reason. Yeah. Because crime analyst is more narrow.

And a business analyst give me more wider and higher perspective to look from top to bottom like to get access to databases, to get access to other units that I never met before.

**Jason:** So then in terms of you being, being there with the department for four years, , what are you most proud of as you [00:46:00] look back ?

## I

**Svetlana:** participated in the couple interesting homicide cases as a analyst, so I did, I helped with presentations to GA to charge people who was suspects in this, those cases, and my relationship is all units. I'm very proud that I was able to build relationship with sworn people because it's always difficult, especially when you're female in the male world.

Yes. But I, I think I did it successfully in it's helped me a lot when I was in turn and here, and especially because. It's, I started go to gym and for, for foreign people, yeah, I know, but it feels like, Oh, she's with us. Like we do, we practice in gym. We exercised. It means this person hours and I started participate all sports [00:47:00] events that I capable.

Like running events we have this event in California, it's called Special Olympics running when all agency carry fire and collect money for special needs kids. The torch torch running. Yes. And every year when we do it, I participate in this and I feel like it's, I feel a very, like I'm in team together because all, every time it's only.

And it's sad for me because it's only sworn people participate, so, and I'm with them, so, and now it's not them and us, it's we are, so I feel like I joined this team, and this is my best achievement, besides I do a great job, but yes, and honestly, I just find out today that actually in the May, [00:48:00] I got good, it's called it's called good conduct bar that actually it's Swarm people get it.

So, it's like a plank. You put on your uniform?

**Jason:** It's, it's, it's accommodation. Oh, it's, yes. Or is, or is a pin, is it something that it, accommodation?

**Svetlana:** It's like a, it looks like a plank, you know bar? Mm-Hmm? . Oh, okay. Bar. And it's, I was told that it's very difficult to get it and I find out I got it in a may, but I just found today

So this is, someone forgot to tell you. No, they put in my box outside and it's very small and just drop inside. Yeah. So for me, it's a huge honor, you know to get a word that happened. I don't know if any civilian actually civilians got this award, but this plan, I just don't have uniform to wear it but for me it's a huge deal.

And yeah, [00:49:00] I always support events that happened. A sworn people because we work for them and they have to see us not like we just doing something. But we actually support her for their investigations and jobs they doing.

**Jason:** And certainly we've talked on the show from time to time about sometimes the strained relationship between civilian and sworn.

But it is a really good feeling when you are a member of the team and . You have what you're responsible for that truly makes you part of the team. And it's not something that's just something trivial. It's a key contribution.

. Yeah, thank you. Yeah, so all right, well, let's go on to like a more general topic in terms of data science and law enforcement, because I think I've talked on this show a couple of times now about really, I have, I do think [00:50:00] there is a lack of science.

In the profession and I'm really surprised given that this professions 40 plus years old in the United States that there isn't more science. There isn't more math and a lot of departments are just doing. Very basic statistics, mean, median, mode, and we're still just doing some basic distributive statistics where we're just doing counts.

We might do average call for service responses, but for the most part there's not too much heavy stats. There's not too much technical stuff. Skills and analysis. I feel there should definitely be more. So it's definitely a challenge for our profession to get more technical. So I just wanted to give you the floor a little bit [00:51:00] and just have you talk about your perspective and your thoughts as we're trying to get more of data science in law enforcement.

**Svetlana:** Yes. When This profession, born and raised, it was not enough like a computer, we mostly use calculators to do everything manually. And it was clear at that moment that yeah, it should be something simple and easy. When it started, but through the years, unfortunately, it was not developed deeper.

People who taught it, who provide for us trainings, they still the same people. We don't have it like fresh blood who will teach new generations with new techniques, skills, and this is probably luck. When we have trainings for crime analysis, even when I took trainings, I noticed what they taught us. It was very [00:52:00] basic, very simple.

And the second problem is people jump to work and so busy. They don't have enough time to. To put time and effort to for development, but I think I can say we have to must it's not good more than English as I taught English it should be a good if every one of us spend at least one hour a week for trainings for looking for new techniques.

Even many of us use Excel. And know some formulas, we should spend some times a week to looking for new formulas, new features that developed by Microsoft. There are so many trainings, they send every week some new tips and just practice it a little bit. So develop and look out of the box to understand what [00:53:00] is more wider criminal justice.

It has tendency hire people who has education in criminal justice, but for specialization to be analyst. My personal opinion is should be people from statistics, math, computer science with some knowledge like in minor in criminal justice. Because we can study this field, but study technical skills is very, very difficult.

And now it's very popular became a data scientist and nothing better than this. So if you bring the data scientists to this job, train them in law enforcement, it would be, I think, good combination because these people has technical skills and we teach them criminal justice. And it will be good results and at least when, especially it's important when people work as a solo analyst or if they multiple, at least one person have to be data scientists, [00:54:00] data analysts to know how to manipulate this data don't have to be all of them, but it's have to be at least one person who willing to share a knowledge helped.

to create templates to explain, give some trainings to his or her peers like to motivate everyone to study and get some, something new and efficient. Like I know in New York, they have a whole department of data people who is not criminalized their data and they have. To data analyst people.

So we are not new york. We're not so big and not don't have so much money. But I know many cities like I talked to Portland. I talked to Riverside and I got this name in the south of California. Another city. They have at least one person data scientist on data research. Person who is doing like main [00:55:00] heavy stuff job and team of crime analyst with whom he or she tightly work.

And this is like it's a good combination. Yeah, so

**Jason:** is when it comes to the data scientists. And are they producing reports or are they coming down with recommendations? I mean, I think, I think one of the big disconnects between when you talk about technical skills and statistics and math is that gap between the science.

And then the practical application and really the what is what is the technical skills producing that can be put into practice. Right. I almost think in a way you almost need a recipe at first. So everybody can you go through step by step on exactly how, how the technical skills [00:56:00] produce this and then come out with some actionable results there.

And I, but I do feel that there is that gap between , the concepts of math and science and stats, and then the actual practical application.

**Svetlana:** What's happened in this field I can answer this way, the most of the time like when I was in Concord and working here and any other city, it's very common that IT department.

Of the city, they hold all databases, all information, and they don't share. Anything with anyone they don't allow access because they don't trust people. So the data scientists it's exactly that person because it's not who produce report data scientists. It's It's a qualification of person who can get raw data, make it

perfectly, make it magic, who can connect [00:57:00] to databases and understand what is going on, how it's connected, how it's working. So it's a person who IT can trust. And give access. Then data scientists, it's a person who can extract data, create environment where it's user friendly for other analysts and and other users, not just a crime analysis.

For example I created system from records where they can, every morning it updates automatically, they just open application, download they set data dates, like from today to yesterday, or three days, three weeks, and they get reports they need. So my job as a data scientist was connect, select what they want, results they want to get, and create this application.

So now it's their job, download data and [00:58:00] analyze it in the way they would like to do it. When people want, I can do next step, create an analytical

report that they can use to report to chief or whatever. So it depends on until what stage they would like, but data scientists, it's not just person who provide report.

He can. Provide report. He can clean data. He can or she can connect to databases, work with I. T. and get some additional manipulations. So it's a person who can cook and produce results inside the Because most of the time we don't have data. We have to work with third party company who provide for us and rely on how they manipulate with our data and provide like, uh, extracting, like recently I took one company, they provide training for us for Bay Area.

dePartments and I asked them, [00:59:00] okay, we, we extracted, we selected, we found perfect. How can I download it? You can export PDF. So how can I work with PDF, uh, list of incidents? So they created nice, how to do search, how to find by keywords, everything. But when it's come to downloading, I need the list in Excel to work with, PDF.

Or just use a snip tool and this is, doesn't work perfectly. So in ideal world, yeah. And this is how we can integrate the data scientists. So it's not just statistics. Where is some deep calculations. This is also included because when you clean data when you create search inside your data, it's some manipulations.

Yes, but it's, it's a whole like cooking process to help people, analysts, intelligence investigation analysts to work [01:00:00] easily. Yeah.

**Jason:** So I, I, I think I understand the, the point of data science, it's a little bit of in between IT. And end user, like they, they need to have certain technical skills in order to manage the data and manipulate the data and create an environment for the data to be usable.

And there's certainly, certainly there's the, the level of skills that would be necessarily to do that. So there, is that aspect to it, but I would think that the next level for that though. , would be applying some more statistics, more math to the equation there, that they're actually doing some Heavy duty probability on the data and producing it that way going beyond what I had described earlier, which is just descriptive statistics [01:01:00] and more into applying stats and mathematical.

Applications.

**Svetlana:** Yes. So when everything is perfect, you establish connections with your IT, you're working, you have your data, you satisfy everyone, you create templates and everyone is working. Yes. Now what's next level? Yes. It's doing a more deeper analytical hotspots.

Crime patterns data, are we actually growing in crime or we still in the same level? It's forever question applying like time series for crimes because it's actually The same as it happened in market, we have a time series how stock market is growing or dropping price, the same as crime, up and down, and when it's up, it's okay, and when it's not, to see any descriptions when it started actually [01:02:00] growing more, in what area, do we need to jump every time when we have multiple crimes in specific areas, or we just can Be flexible because this is a normal when we have some jumping and what to do with this.

Yes. Yeah, this is will be next step. And this is I hope we will have in in Oakland to like more. This is bring us to transparency of law enforcement. And to open data to more explanation why and what and how it's happened. Yes, you're right.

**Jason:** If they want to get more on the data science side. They want to get more knowledge, skills, and abilities in terms of math, stats, and the technical skills that you mentioned. What do you recommend to them?

**Svetlana:** For those who are working now, it's maybe a good idea [01:03:00] to take, especially right now, it's lots of free classes online.

Take some classes for data science to be able to understand how we can analyze data, how we can clean data, what's actually data, and for those who are trying to get in this field, maybe consider Options to have a minor in statistics or computer science, or maybe switch minor to major and have more technical classes, or at least take some additional classes spend maybe a little bit more time in school, but get understanding how to deal with data, not in a just simple way, but being more prepared.

And I hope we will, have a new way of training for crime analysts to prepare them and use new tools, not just calculator and calculate everything average, but take some programming languages, take [01:04:00] some software like Power BI Tableau, Quik, SAS many of them on different languages and even in Excel allowed us to do statistics and be more complex and interesting and save time for routine job and spend more time for interesting project and help with investigations. So my advice, train yourself, look, find the time. We always procrastinate time. So procrastinate it with training.

**Jason:** Yeah. And I noticed on your resume here, one of the programs that you used is R, which is a free software that anybody can use, and there are. Lots of training opportunities, YouTube videos and whatnot that you can learn how to use R.

So for, I guess, for you at the police department, how did you use the R software?

**Svetlana:** I use it for statistical analysis right now for projects. [01:05:00] Oh, I did projects in the school. So for me in my crime analysis unit, I was not allowed to use R. So I use R very carefully, but I use it in school and when I used to work in Concord.

Yes, but I know, yeah, but I know that there are many packages and interesting projects in R for calculation crimes, doing some interactive dashboards. And actually R is a specific language for for statistics. So many people study Python. It's a good language, but it's more general and very powerful language.

Study R is more narrow language because it's specialized on statistics packages. Statistics products and visualizations. So this is language we study in school, like a major language. So I, I took a little bit Python and SAS SAS mostly [01:06:00] used in genetics. And because FDA, they required everything made in SAS language.

Because they know what's packages about, and it's very expensive. But Python and R is very interesting and If agency allowed to use it, it's good languages, not just statistics. You can do many tools especially if you don't have a, like a huge data sets, you can use it easily. All right. Well,

Jason: let's finish up the show with personal interest then.

And for you, you had mentioned it before that you run as part of the police department team for the special Olympics passing the torch. And, but you also do this for normal exercise. You are, you have ran several half marathons. How many half marathons have you ran? Oh,

Svetlana: it's probably hundreds.

Oh, wow. In four, I [01:07:00] started a year before pandemic 2019. So it's, it's about hundreds. I, I, at some point I stopped counting because it's became so many. I don't even remember which one I did, which one not. I just remember which one is more excited of them. Most interesting or most tough. Yes. And I did one marathon.

I did only one marathon. Yes.

Jason: Yeah. So what was the. toughest one

**Svetlana:** that you did? My toughest was, it was almost 14 miles because it's a trail marathon, half marathon. It's called ultra half marathon. It was a little bit longer and it was almost 4, 000 feet up. Oh, wow. So yeah, it was longest and the highest.

And it took me almost, I'm a very slow person, I'm honest, it took me five and a half hours to finish it. Yes, but I didn't feel like I spent so much hours [01:08:00] because I just was, it was a nice park. Nice environment, nice view. I was enjoying and good weather and give a parallel. I was thinking about my, some of my projects, how can I organize them?

And yeah, so I even didn't feel like I didn't have enough food or water. So they provide for us, but I didn't feel like I need too much, but it was very, it longest and the toughest one. Yeah.

**Jason:** Yeah, that's quite an elevation, man. That's like let's basically climb in stairs for five hours.

Svetlana: Yes. Yes

Jason: Man, so yeah, I've ran both marathons and half marathons.

I do really like the half I I think that is a really good distance And to me, I've always said the marathon is like overeating. Like to me, it's just like way too much. It's way too far, I think. [01:09:00] And then there's just like this recovery process, whereas I could run a half marathon as you probably can too, and not have like the severe soreness and recovery time that goes along with running a

Svetlana: marathon.

Yes, especially I don't do it too fast. So it depends on location, distance and environment, how hot is or how cold is. Yeah. So, and I just enjoy what I'm

doing and yeah, half, half marathon is a good distance, everything up to 20 miles is a good distance, everything beyond 40 miles. I did twice. 19 miles and I did once 26 miles.

Yes, I did once it was too tough, but I hope to go once in the real marathon. And I, I thought it, I heard it's addictive. Once you did it, this has happened with my half marathons. I never did before. Like I, I always run like 10 K, but then [01:10:00] I tried because it was a cool half marathon in Las Vegas.

They close trip strip for night time and you run in the middle of Las Vegas. Everything lighted, no cars, and you just run half marathon and marathon. So whatever you choose. And to prepare for this, yeah, it was so cool. I just said, okay, I need to practice. And I did my first half marathon, then this in Vegas.

And then I just, like my friend said, no reason to run 10K. Just half marathons, periods. Yeah. It's true. Yeah. It's good enough to be tired and not overtired. Yes.

**Jason:** Very good. All right. Well, our last segment of the show is words to the world. This is where I give the guests the last word. So Lana, you can promote any idea that you wish.

What are your words to the world? My words

**Svetlana:** to word? What happens right now in the world, I wish everyone, let's be let's talk to each other and be [01:11:00] peaceful. Because when people kill each other, it's terrible. Not just in my home country, where I'm born, but everywhere else. It's so difficult. And I wish...

It has to be stopped. If I can, I stop it. So let's be peaceful people. We're human. We can talk and find solution and be respectful and respect each other.

**Jason:** Excellent. I feel badly with saying this now, but you very good. I leave every guest with you've given me just enough to talk bad about you later.

But I do appreciate you being on the show, Svetlana. Thank you so much. Did you Be safe.

Svetlana: Thank you for inviting to me.

**Mindy:** Thank you for making it to the end of another episode of Analyst Talk with Jason Elder. You can show your support by sharing this and other episodes found on our website@www.leapodcasts.com.

If you have a topic you would like us to cover or have a suggestion for our next guest, please send us an email at [01:12:00] Elliot podcasts@gmail.com. Tell next time analysts keep talking.