

Dr. Andrew Wheeler - Crime De-Coder

[00:00:00] **Mindy:** 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 be that analyst and join us as we define the law enforcement analysis profession one episode at a time.

[00:00:17] **Jason:** Thank you for joining me. I hope many aspects of your life are progressing. My name is Jason Elder and today our guest has three years of law enforcement analysis experience. He's also collaborated. with police departments for over 10 years. He has 10 years of experience in Python, R, and SQL. He holds a PhD from SUNY Albany.

[00:00:40] **Jason:** He's written a book entitled, Data Science for Crime Analysts with Python. Python he is in consulting. A company called crime decoder. He is a principal data analyst from Gainwell technology, please. Welcome. Dr. Andrew

[00:00:57] **Andrew:** Wheeler. Andrew, how are we doing? Thank you very
[00:01:00] much, Jason. i'm coming here to talk to you guys today about about that python book that jason mentioned But i've been a longtime listener of the podcast here.

[00:01:08] **Andrew:** So i've come to the podcast The IACA stuff over the years and and pass by you Jason in the hallways and stuff like that So happy to come and chat with you today

[00:01:17] **Jason:** Very very good. But before we get started some just a little fun. Your linkedin picture I took a quick look at it and you remind me of Walter White and then you have that little cartoon icon that kind of reminds me of also the Breaking Bad as as well.

[00:01:35] **Jason:** So I don't know if you've ever got that, but it's I don't know. Definitely , that caught my eye today when I was checking out your LinkedIn page.

[00:01:42] **Andrew:** That's the first time I've gotten Walter White. So that's, that's a, that's a first to me. My wife is the one who's done the graphic design though for my little cartoon character.

[00:01:51] **Andrew:** And I have gotten, oh, that does look, that does look like you a lot in person before. So.

[00:01:57] **Jason:** Yeah. And it's funny how those cartoons [00:02:00] can pick up. People like who they are like you as you said you look at it. I was like, oh, yeah, that's him And it's and it's a cartoon Obviously a leaving out a lot of detail, right?

[00:02:11] **Jason:** Yeah,

[00:02:11] **Andrew:** I don't think i'm gonna start wearing a fedora around though to to do my walter white impression though. So

[00:02:18] **Jason:** , but you definitely got the science part which we're gonna get into right? I I

[00:02:23] **Andrew:** don't I don't think I can hold a candle to to walter's You background, but, but yeah, definitely can, can talk a bit about technology and applications of Python and, and in applications towards crime analysis.

[00:02:37] **Andrew:** So happy to do that with you today, Jason.

[00:02:39] **Jason:** All right, let's get started. How did you discover the law enforcement analysis profession?

[00:02:43] **Andrew:** Yeah. So, so for this, I, I would go back to undergrad and all my degrees are in criminal justice. My, my initial plan. When I was finishing up my my undergraduate degree was to actually go into state parole What ended up [00:03:00] happening was I accidentally took the civil service exam too early.

[00:03:04] In in I was in at Bloomsburg University in Pennsylvania, , so took the civil service exam and I did well in that. They called me up and were like, Hey, we want you to come and do our particular training in like February or May or whatever. And I was just like, well, I can't go and do that now because I need to finish up my degree.

[00:03:23] **Andrew:** And the way that it works is you can't take it for another year or two in Pennsylvania. So I basically like kiboshed that particular plan. But around that time, , I already had an interest in numerical analysis, so even though I had the criminal justice degree, I took a GIS course and I had a minor in In stats you had an analyst on a little bit ago, Caleb Myers, me and Caleb

were in the same program, he was a few years after than me, but probably a bunch of the same courses and stuff, so, I had sort of that numeric background, I started looking into grad [00:04:00] school then applied, got into SUNY Albany.

[00:04:04] **Andrew:** If you had asked me at that point so, senior and undergrad, like, what a crime analyst was, I don't think I would have known. But that said, I sort of had all the, the building blocks, so I had the, the stats background from my undergrad, had done GIS, and then going up to Albany, I was, I was, Interested in doing that type of number crunching work.

[00:04:25] **Andrew:** I just didn't know specifically about crime analysis. But shortly when I got up there, worked for Rob warden at his non profit the fin institute and they collaborate with a bunch of police departments in upstate new york and Shortly after there. I ended up being one of the analysts in house At the troy new york police department.

[00:04:50] **Andrew:** So this was while I was getting my phd and It's the same setup that you interviewed nate mehan recently it was it's it's pretty much the same thing that [00:05:00] nate did at Schenectady I did over at troy just a few years later after nate so That's how I got into the field did that for a few years You in Troy in house Troy, Troy was a great place to work.

[00:05:14] **Andrew:** And then once I finished my PhD I went down, I got a job as a professor at the University of Texas at Dallas, but I continued just to do work in collaboration with police departments. That was essentially these applied projects that were overlapped heavily with crime Analysis I sort of got the bug there while I was doing my PhD.

[00:05:38] **Andrew:** So did a bunch of research related to crime analysis and then continued to do collaborations with police departments that was essentially just like applied crime analysis research. And then for to just keep going with with sort of the career trajectory was a professor at the University of Texas at Dallas,

[00:05:57] Around two or three years after I was [00:06:00] there, I decided I was kind of over being a professor. I went and got a job in the private sector as a data scientist. I still have that particular position now, my day job, I basically look at healthcare claims data, and try to identify fraud, waste, and abuse, and apply predictive models to identify medical claims.

[00:06:21] **Andrew:** That are bad for various reasons and in the end, it's not all that dissimilar to the work I did as a crime analyst. I mean, doing a private sector data science job is a little bit more advanced in terms of like writing software applications, but in terms of looking at medical records, it's not all that different than looking at crime incident reports. And then like you like you said in my introduction, I still do consulting with with police departments that involves continuing to do stat analysis similar to what I did as a crime analyst. But it can also be like more advanced software engineering projects working with police [00:07:00] departments, so yeah, , that's pretty much the whole career trajectory up until now for me.

[00:07:04] **Jason:** Oh, wow. And you just mentioned Nathan Meehan and I had on Matthew Douglas recently before we Hit record. You mentioned Eric Piza, and I thought, man, four of you , at a dinner. It would be awesome to pick you guys' brains.

[00:07:22] **Jason:** Yeah. It type of thing. Like that would be maybe I'll try to set that up. .

[00:07:26] **Andrew:** Yeah, I know, I know. And it's, a big IACA crowd , I've overlapped or talked with a bunch of individuals over the years, , I know, I don't know, is there like 5, 000 individuals or something like that?

[00:07:40] **Andrew:** And I think

[00:07:41] **Jason:** it's actually up to 500.

[00:07:44] **Andrew:** Yeah, there's it's, it's definitely listening to your podcasts over the years. It's it's, I know, and have crossed paths with a lot of those individuals.

[00:07:53] **Jason:** Yeah. So when you go in Detroit for the first time. , do you feel that you're going in there as an academic [00:08:00] into that position?

[00:08:01] **Jason:** Or are you just so green yet that you're still trying to figure everything out?

[00:08:06] **Andrew:** Yeah, it was definitely the more green scenario. At that point, gosh, I would have to go look up. I may have been like 26, 27. So not like not uber young, straight from undergrad, but still hadn't, hadn't had a salary job or anything like that before then.

[00:08:26] **Andrew:** I'm not sure if I had. Particular strong expectations for the role. So very nerdy, very focused on just doing data analysis stuff. Very green in terms of of interactions and how it would go there. But I, I really love the job and it worked out well, partially because the chief at the time, John Tedesco, he, it was a really good environment where he supported me.

[00:08:51] **Andrew:** And supported my work in the organization in a way that I know a lot, not all analysts have, that [00:09:00] did allow me both freedom and discretion to basically make the job my own, but as well as supporting that type of work that I was doing. It definitely ended up, despite me being green, it ended up being a good environment for me to sort of get my feet wet, which isn't always the case in those single analyst shops.

[00:09:19] **Jason:** Yeah. So Troy's outside of Albany, so you're probably talking a pretty small jurisdiction, right? Relatively speaking. What were the issues you were trying to solve or what was the crime that you were studying? What was the chief hoping to get out of you?

[00:09:35] **Andrew:** Yeah, I didn't go in on day one And there was like there's x y z problems despite troy has around around 50 000 individuals probably less than that maybe closer to 40 000 now But that said a lot of these cities in upstate new york sort of those old rust belt cities You Whether it's troy or albany or syracuse or buffalo They they do actually per [00:10:00] capita have a lot of crime there was no shortage of crime like I could do different metrics We would have like a weekly command staff meeting and I would make graphs to show the ups and downs and crimes There was those were not like flatline zero graphs going into those particular meetings.

[00:10:17] **Andrew:** There was plenty of Both both property crime and violent crime. I could go in and focus on, on sort of whatever I wanted to choose. There, there was some particular problems that were on the mind of the police department. There was metal thefts At both empty residences and in construction sites was was one of the particular problems, but I mean, there were there were problems that cropped up all the time.

[00:10:44] **Andrew:** I remember that there was there was a community college nearby Hudson Valley. They would get their their student. It was like apartments, but they were on campus, or I forget exactly if they were on or off campus, but they had a bunch of apartments that would always get broken into over [00:11:00] Christmas break was one example.

[00:11:02] **Andrew:** I mean, there was examples of the community groups that had. Students at RTI University complaining about them. Then there was like the more serious crime of robberies and things like that in different areas of the city. So there was definitely, there was ample opportunities to focus on different crime problems around the in, in my day to day work.

[00:11:25] **Jason:** All right. , let's have story time then. So it's, It's the Analyst Badge Story, and for those that may be new to the show, the Analyst Badge Story is the career defining case or project that an analyst works. So we're here at Troy, it's about 2012. What's going on?

[00:11:39] **Andrew:** Yeah, so, the thing I was the most proud of at building in Troy Was i'm very numbers focused as you can tell and I focus heavily on doing different data automation processes, right?

[00:11:54] **Andrew:** Right when I started so i'm sure a lot of analysts can relate to this Especially if you're jumping into a new job [00:12:00] you get into the job in the way that the prior analyst did it it's like a a crazy mess of like crystal reports and Pulling data from all these different systems and I ended up spending a lot of time And one of the things that that I worked on a ton was to create an automated mapping platform And that was that was essentially just you get the historical data, the address data in, and our RMS didn't assign the, the latitude and longitude coordinates, so I had to develop, so, historically, folks would like, just pull it into, to Esri and then geocode it and make maps that way, in sort of a manual process.

[00:12:37] **Andrew:** I ended up just spending a lot of time to fully automate that. So it would just like batch update every night, geocode the new addresses that came in or just do a lookup table of historical ones. And then based on that we didn't, I didn't do the, the. The online map, but, but based on that information, I was able to hook up it at the time.

[00:12:58] **Andrew:** I think it was called raids [00:13:00] online, but I think it's like Lexus Nexus mapping now. Based on that data automation, I was able to do, we were able to get it set up so you could send them that data. And in one of the one of the nice things about that was one of the one of the projects I did and would spend a ton of time on every month is we had different community groups around Troy and historically the analyst would make paper maps like literally print out paper maps to take those meetings of the recent crime event.

[00:13:29] **Andrew:** Once that that raids online and or lexus nexus, whatever it's called now Got set up folks could just go in and you know put in their emails

and get automated update alerts So like I didn't need to do any more print maps for the community meetings anymore And that was the thing that I think was a ton a big time saver and then of course because you use that mapping for so many other different projects hot spots or Looking up a particular crime series.

[00:13:56] **Andrew:** It ended up being sort of like a big deal In the workflow and [00:14:00] doing ad hoc products as well

[00:14:02] **Jason:** so i think it's fascinating because it certainly you're skilled. Right i mean i talk to us all the time and some of them are on more on the techie side some of them are on the. Puzzle solving side some people are on the problem solving side.

[00:14:21] **Jason:** Not all analysts, given your same scenario, are going to have the skills to build automation like you did so were you always like naturally inclined to be a coder, like even going back to your college days or high school days is the coding come naturally to you?

[00:14:41] **Andrew:** So it was something that I started to pick up in, in undergrad. And then really dove into it in a, in a more serious way in graduate school. So it was definitely the case that my, my work in graduate school helped me sort of develop that. I [00:15:00] think it's a, it's a similar sort of trajectory that, that you'll ask a lot of people.

[00:15:03] **Andrew:** I remember my first. first coding stuff was, I wanted to automate building citations in a Word document, I think for, for some of my graduate studies. And I wrote a bunch of VBA to do that. Shortly figured out that you doing those VBA applications wasn't like the best way to go about doing stuff.

[00:15:24] **Andrew:** , so learned more statistical analysis programming. In Troy, that. That automated system I built was using SPSS but over the years learning different software, so the, the, the, the open source software R and Python are a better option than, than SPSS I know now. To do that type of work and it's just like slowly building it up over time.

[00:15:49] **Andrew:** It wasn't like I sat down for six months and sat in a cave and learned coding. It was it was always based on I had a particular project and then I just tried to [00:16:00] figure out the best way. To do that project that goes both for the more advanced statistical analysis as well as it does just doing like simple things like geocoding crime data and a batch update overnight it's

always, it's always, it's always project driven and I just go figure out the best way to do.

[00:16:18] **Andrew:** That particular project.

[00:16:20] **Jason:** All right. Yeah. So during your time in Troy, did you annoy the IT staff or did they treat you as one of their app?

[00:16:27] **Andrew:** Oh, I think I, it didn't take very long for them to just give me the admin access. , I do remember, I think probably about the third or fourth time I asked them, well, can I install this or can I have access to that?

[00:16:39] **Andrew:** They're just like, the IT guy there is just like, okay, here's the, here's the keys to the kingdom essentially. And, and fortunately I did not mess anything up dramatically at that point in my career. I can understand sort of the I. T. perspective though, especially when dealing with directly dealing with like the RMS database and stuff like that.[00:17:00]

[00:17:00] **Andrew:** I definitely had the ability to mess stuff up. Fortunately did not, but I can, I can understand why, why they're a bit hesitant to give that out. But I was, I was fortunate enough to sort of wrangle that shortly after I was working there. Yeah.

[00:17:13] **Jason:** So, and. You're with Troy for a couple years there, and I guess what what made you move on?

[00:17:22] **Andrew:** Yeah, it was always sort of the plan because I was getting my PhD. So It was always the plan for me to go and do a professor gig after I'd gotten finished my PhD That said in retrospect doing the crime Analysis gig. I could have totally been happy doing that as a long term career I don't know if I would have said that Troy because it's like a sole analyst place.

[00:17:47] **Andrew:** There was no real opportunities to move up. But in retrospect, I really love that job, love working in the police department. And I continue to like working with, with police officers and doing these crime analysis [00:18:00] projects with, with police departments externally. So, I mean, it was. The the plan was always to go get a professor job But in retrospect, I probably should have more considered like going and focusing on crime analysis long term as a career

[00:18:16] **Jason:** All right well Let's get into the professorship then because sounds To me like maybe it wasn't what you thought it was going to be

[00:18:23] **Andrew:** I mean being a professor is Essentially three jobs you you teach you do research And you supervise graduate students, each of those could individually be a job, and you're sort of expected to do all three as a professor the pay just, the pay isn't worth it, I eventually moved on to, like I said, my private sector data science job, and that ended up being way, way less work, I'm not expected to do three jobs, At my, at my data.

[00:18:58] **Andrew:** j. I still find it [00:19:00] quite rewarding, the type of work. So it's not like I'm, I mean, not, not to bag on anybody, but I'm not like optimizing ads on Facebook or anything like that. So I still enjoy the work that I'm doing. And I, in, and like I said, I'm not working as much as I was when I was a professor.

[00:19:18] **Andrew:** So I actually still have the opportunity to do the stuff on the side with, with the consulting. In the end I work just as much, do just as much consulting work now. Collaborating with police departments as I did when I was a professor. So to me, it's like the the best of both worlds

[00:19:33] **Jason:** Yeah, so what did your research focus on when you were as a professor?

[00:19:37] **Andrew:** Yeah, It it only really was broadly defined. I like doing number crunching projects with with police departments I talked about how I focus coding on project base, and it was sort of the same way when I'm, when I'm doing applied research projects with police department, so it may come up that there's, there's some application that I [00:20:00] think would make sense for me to write a paper on.

[00:20:03] **Andrew:** Or it could be a police department reaches out to me and is like, Hey, we have this particular problem. Can you help us out? So one example of that was Carrollton PD ended up reaching out to me with help about doing redistricting for their patrols. Over the years, if you're familiar with a lot of these cities in, in the South, and in, and especially in the cities around in that area around Dallas, Texas, they've just seen explosive growth.

[00:20:29] **Andrew:** So I, I don't know about the population metrics in Carrollton, there has their historical patrol beats, which were intended to be a single officer was assigned to calls in that area. If they were way lopsided. So some of their beats had more than twice as many calls as other ones.

[00:20:45] **Andrew:** They're like, well. Can you help us redraw those? I ended up creating a linear program to help do that. That also equalized the workload.

So made it, so made it so the solution to that program, , they couldn't be that uneven. They had to [00:21:00] be pretty close to the same amount of workload.

[00:21:02] **Andrew:** That's just like an example Problem I worked with police departments and doing number crunching stuff. Another one. I like to Talk about is this was when I was still up in in albany, new york a lot of police departments up there. We're doing an intervention called Focus deterrence. So for individuals who aren't familiar with the intervention, so it's a, it's a group based violence intervention. The way that it works is that you identify your particular group involved individuals. I say group because it doesn't necessarily need to be like a named gang.

[00:21:38] **Andrew:** You do what are called call in. So you call in. the individuals in the gang and have a meeting with multiple individuals and say If you do these triggering events, which is typically having a shooting or sometimes a stabbing of a of a rival gang We're going to go after the whole gang and it's called pulling levers is the [00:22:00] idea and it's not necessarily just focusing on the shooting It's doing Everything to make people's lives miserable.

[00:22:07] One of the examples in in Syracuse that they did Was a lot of people were I I don't know the correct term. They were like skimming. Cable So it's like they would, or maybe splitting the cable. They would, they would, they would work with Spectrum or whomever and go and basically cut people's cable.

[00:22:26] **Andrew:** So that was like one of the example pulling lever strategies that they would do in Syracuse if, if a gang sort of violated that contract. And the idea is to get it, it's a collective action problem. So you can't go to one individual and tell them, hey, don't shoot at other people when other people are shooting at them.

[00:22:44] **Andrew:** Essentially, so you try to get entire gangs to sort of have this mutual agreement to not go after each other because if one of them messes up, it's going to mess up everybody in the gang and it's been shown to work in a lot of different jurisdictions, but I know that's a long winded [00:23:00] story. One of the things that I did doing that work is for the call ins.

[00:23:04] **Andrew:** You can't force somebody to come in. Okay. To a call in. The only way that they could effectively enforce it was individuals who were on parole, the parole officer could be like, you need to go to this meeting as part of your parole conditions. It ended up being a lot of the different jurisdictions.

[00:23:20] **Andrew:** I, I was looking at the call in data, like drawing the social network graphs and I, and I saw that they were calling in you need to go to this in the network and then I basically created an algorithm to help identify sort of the best Individuals to call in because they're more central to the gang. So I would draw the social network algorithm and show that the people that they called in were on the periphery So imagine you have like your blob of your social network and the people who they called in were sort of like on the edge whereas you want to call in the people in the middle of the gang who touched more of the gang I, I made an algorithm to help prioritize who they should, who, who they should call [00:24:00] in.

[00:24:00] **Andrew:** And I like to do that. That example is it, it was just, it, it's a little bit complicated in figuring out the, the technical aspects of it, but it was just like, it, it's a very applied problem. Who to call in, in these particular gang interventions that has sort of like a, a clear operational. Implication for departments that are doing this particular intervention, and I just went and figured out the best way to do it.

[00:24:24] **Andrew:** It wasn't like I had it's not like I focused on social network analysis or anything like that for my academic career, but it was focused on. I saw this particular issue, and how police were doing their operations, and what can I do to help make that more efficient?

[00:24:39] **Jason:** All right, so, , you applied some kind of equation to the idea of like, okay, who's next?

[00:24:45] **Jason:** Who are we targeting next?

[00:24:46] **Andrew:** Yeah, so, it's, it's, I, I know it's a little bit difficult with just the, the audio podcast, but I, I know most analysts are going to be familiar with like a social network graph. Imagine [00:25:00] on the screen a social network graph and you pick the nodes in that graph that basically have the best distribution.

[00:25:07] **Andrew:** Imagine you pick, you have a graph of like 10 people and you try to pick three of those where everybody's touching at least one of those three. And that's, that's, that's a technical term is called the dominant set of the graph or Basically coloring in the graph. So everybody is either called in or is a direct connection to somebody who's called in and the idea behind that is you don't want to play the telephone game.

[00:25:33] **Andrew:** So you don't want to call in somebody and then have to tell somebody else. And then that person have to tell somebody else. You want the message. To be as direct as possible knowing that you can't call in everybody for the gang. You try to pick the best people to call in to fill in the network.

[00:25:48] **Jason:** So how effective was this?

[00:25:50] **Andrew:** Yeah, , there's still the issue like I said is you can't get everybody. To come in but essentially to get that to to get like the [00:26:00] graph filled in to the extent that you can You don't end up needing to call in that many individuals You only end up needing to call in maybe like less than a third of the gang at least in the example networks for That was in syracuse and albany and troy that I did that, that particular work for,

[00:26:19] **Jason:** I'm guessing to, or I'm curious because in Cincinnati, when I was there, the police department worked with the University of Cincinnati and, and did, it sounds like something similar with a little bit social network analysis targeted certain folks.

[00:26:36] **Jason:** Sarah Lee went to the point of, like, trying to get everybody on the call and then and doing doing what you're describing per se. But I do know that they basically told them, hey, we know who you are. We're working with the judges you're a target, , if you keep on doing what you're doing, we can throw a harsher penalty at you now, here's a bunch of [00:27:00] services to help you get out of the gang or get out of this, this cycle of violence that they were in.

[00:27:08] **Jason:** Is that also something that, that your program implemented to gave them opportunities or pointed them to programs to help them?

[00:27:16] **Andrew:** Yeah, so it was typically a package of both the both the deterrence part like we're gonna come after you and the entire gang If you mess up, but there was also an individual there who was that social service individual And you know a lot of people may think that You know these these individuals who have a Criminal histories that have made them sort of a priority for police department.

[00:27:43] **Andrew:** So these these are folks who You know have pretty rough paths it's not all of them, but a non trivial number of them if you just give them opportunities. You're like, hey, here's a here's a social worker to help you help you get your license help you [00:28:00] apply to jobs and do that type of stuff They'll take you up on it.

[00:28:03] **Andrew:** It's not it's not everybody but it's not it's not so low that it's definite It's not worth doing. I think actually, some police department. I think it's becoming more common, especially with the The groups that are sort of doing the alternative police responders like having the the mental health counselors go to calls and things like that having more types of caseworkers help individuals.

[00:28:25] **Andrew:** So instead of being this criminal justice, just, just arrest them and put 'em in jail. Have a more case worker. And, and I think that that's a, a really good sort of program and idea that can be expanded out in a lot of different ways.

[00:28:39] **Jason:** All right. So curious to know as we move on to the private sector.

[00:28:45] **Jason:** I'm fascinated with people's trajectory as they move on from public, academic, private sector, and maybe back and forth and just the differences. So you have your, your [00:29:00] geekery you got your coding and you've done that at the public sector with the police department. You did that at the university.

[00:29:07] **Jason:** And then you took your skills there to the private sector. In terms of just comparing and contrasting those three entities in terms of your skills, like paint us the picture of how those three entities work in terms of what you do.

[00:29:23] **Andrew:** Yeah. So the, a lot of times people sort of paint. The private sector as being like sort of magically more efficient than the public sector.

[00:29:33] **Andrew:** And I, and I don't think that that's the case. The organization that I work for now has around, I forget if it's 5, employees. We're all remote. And in my day to day, there's a ton of similar inefficient sort of things that happen in a big organization like that, that happened in the public sector. So it's not like a magical.

[00:29:55] **Andrew:** Panacea, where, where everything gets all done and there's no [00:30:00] bureaucracy or anything like that. The main difference is between the, the private sector versus the public sector is one in my, in my private sector job, definitely have more access to funds. And that means like more access to not only a higher salary, but more access to potential software, software support.

[00:30:20] **Andrew:** So there's like, there's this whole, Infrastructure that for the most part doesn't it may exist in really big police departments, but in in most typical police departments like Troy doesn't so like we have entire staff database administrators, for example. That police departments could definitely use that type of of support, but they're for the most part, they're, they're not going to have it.

[00:30:46] **Andrew:** Maybe the uber big departments like Chicago and NYPD and LAPD and stuff have that, but, but most like Troy are just not, it's just not going to happen. The the other big part. Of [00:31:00] being in the private sector organization is I'm more so my title is a data scientist but I'm really writing software when I worked as a crime analyst and it's similar to when your professor is sort of project to project.

[00:31:15] **Andrew:** So an analyst you get a data request, do like help with DDAX or something like that. And you do it one time and you generate a map and you go to meetings and, and that's sort of the end of it. Whereas in my private sector role, I have an expectation to write software that sort of lives forever.

[00:31:34] **Andrew:** So it wouldn't be a, it's sort of a, An example would not be to do DDACs one time, it would be like, well, I want an application that gives us our DDAC hotspots, and it gets updated every day. , that, it seems like a simple change, but it's, it's not in terms of, you have to write sort of more reliable software that runs has logs, can be [00:32:00] auditable after the fact, and you're responsible for that software to like live on forever, essentially, , that's the main, the main difference, and it's part of the reason why I wrote the Python book, so I've learned a ton in my particular job, and I think doing those, the automation is sort of the first step, In that process, doing the automation stuff is sort of the same as writing that software, but the software is sort of the next step up in making it much more reliable and in ways that other analysts, it's not like if, if, If you go and take a new job and a new analyst comes in, if you write professional software, you should be, that new analyst should be able to come in on day one, run that software with or without your help essentially.

[00:32:47] **Andrew:** And that's something that's, most analyst shops are not gonna be able to meet that standards. But I think it's a goal that should be more widely adopted in our industry.

[00:32:56] **Jason:** Quite interesting. 'cause I envision you, you mentioned the [00:33:00] personnel. That you're working with database administrators, but I also imagine just everything being bigger, better and better.

[00:33:07] **Jason:** And in terms of servers, in terms of processing, in terms of the amount of data that you're dealing with, it is just you're dealing with a bigger engine in terms of data processing.

[00:33:20] **Andrew:** Yeah, it's, it's definitely the case that there's, there's more resources. Like that and I and I mean my particular company we do have a big footprint So I have some applications that need to Churn through billions of records of data, which most police departments aren't going to to have that that level of need That said, consumer grade Electronics can really handle a lot of that now it's not you don't necessarily need a big budget a big cloud budget or anything like that So we have that but it's not It's not totally necessary for a lot of the different stuff that we're deploying.

[00:33:59] **Andrew:** It [00:34:00] definitely is a big, healthcare has so much money associated with it in ways that would blow most people's minds. So like my day job has a particular application where it just identifies when people get in car wrecks it shouldn't be medicaid paying the bill. It should be your your insurance you that sounds like a simple thing, but last year they basically processed a billion dollars of those particular subrogation claims and I don't even know our market share.

[00:34:30] **Andrew:** It's it's probably it's not like half of the us or anything like that. So it's just it's just mind boggling money in associated with with health care claims in in the united states

[00:34:41] **Jason:** Yeah, no, I i'm in the health care field as well. So I definitely understand a little bit of what you're talking about The impact and the amount of data and the type of data that you're describing.

[00:34:53] **Jason:** Looking to automate [00:35:00] mundane tasks? What crime analysis isn't? I highly recommend Data Science for Crime Analysis with Python written by Dr. Andrew Wheeler. And as a bonus, enter promo code LEAP, L E A P, to get 10 off either an e book or paperback. Go to [www.crimedecoder.com backslash store](http://www.crimedecoder.com/backslash/store). That's www.crimedecoder.com.

[00:35:26] **Jason:** Crime decoder, C R I M E D E dash C O D E R dot com. Again, enter promo code LEAP, L E A P, for a 10 off coupon.

[00:35:40] **Charlie:** Hi, I'm Charlie Giverdy. Uh, one question that people ask me a lot is how to get respect and buy in in an agency. Uh, and I always tell crime analysts, on day one, the most important thing to do is, uh, find the

biggest police officer in the department and just knock his ass out in front of everybody.

[00:35:55] **Charlie:** www.larryweaver.com And that way they'll all have more respect for you. What I mean by [00:36:00] that is find the people who are your leaders, your informal leaders, your high eigenvalue people, uh, and win them over one at a time. Wow. That would knock them out with what you can do and how you can make their life easier.

[00:36:12] **Charlie:** And then they'll be the ones who go and get all of the buy in before you.

[00:36:21] **Jason:** When did Crime Decoder come along?

[00:36:25] **Andrew:** Yeah, so , even before Crime Decoder, and I was doing the professor stuff, I had always done consulting on the side when things came up, either with statistical consulting or these different odds and ends projects with police departments So I I forget exactly what prompted me to do it, but I finally just decided to make an LLC and and make crime decoder a thing to sort of Advertise to individuals.

[00:36:54] **Andrew:** So so historically it was just people cold emailing me being like hey andy, can you help me [00:37:00] out on xyz project? I was like Well, let's make the LLC, which isn't, which wasn't really necessary, but it ended up, I'm glad I did it. It, it, it's a good learning experience. It ends up being for folks who are interested in doing that.

[00:37:13] **Andrew:** It's pretty easy. Like in North Carolina, I could just do the paperwork all online and it ended up being like 200 and that's pretty much it to make your own LLC. Just, it was partially just for me to start to advertise that instead of just Taking in cold calls passively. That, that was the main, the main impetus.

[00:37:34] **Jason:** All right. So what, what kind of projects are you working on as a consultant?

[00:37:37] **Andrew:** So, so some of those are things that crime. Will normally do so sometimes it's smaller departments that don't have an analyst and they'll be like, hey Can I have help writing this monthly compstat report just automating that Other examples are doing the workload analysis for kalia So it's not really anything different like you or any analysts listening to this could go

and do [00:38:00] make their own LLC and like do that same type of same type of work for departments that Don't have analysts.

[00:38:06] **Andrew:** The other part of it is doing more You Advanced stat analysis or software engineering for individuals. So one of the example projects I've recently done, it wasn't with the police department, but it was with the council on criminal justice. That work's not out yet, but it's, it's essentially looking at domestic violence trends and combining both NIBRS data and the national crime victimization survey to sort of up adjust the NIBRS data, giving a underreporting and domestic violence to get more Local jurisdiction estimates of of domestic violence trends.

[00:38:41] **Andrew:** Let me think the other stuff that's going on right now. We're trying to get some projects going now with with Denver PD helping them do it. Basically do predictive models to identify chronic offenders. That's not funded yet, but doing a, doing a proposal with, with the Arnold foundation here soon [00:39:00] and basically helping them work, identify those chronic offenders and then do home visits they want to do.

[00:39:07] **Andrew:** So instead of doing like the group based call ins, they want to do more individual targeted interventions to those individuals. And it. One of the last ones I'm working with, the American Society of Evidence Based Policing, and we're doing basically it's, I don't know if, if, if me and Renee, that what I call it is evidence based comp stat.

[00:39:30] **Andrew:** So I don't know if Renee Mitchell agreed to that term or not, but that's what I'm calling it now. And it's basically to , help departments, manage their comp stat meetings. Because most chiefs are, most chiefs are for and for analysts listening, if you're not familiar with the American Society of Evidence Based Policing, definitely go check them out.

[00:39:51] **Andrew:** So, it's a lot of different police officers, former officers, as well as crime analysts. It's a nonprofit organization that's focused [00:40:00] on basically diffusing different evidence based practices in policing. It's an organization I'm involved with very near and dear to my heart. Renee Mitchell is the individual who founded the organization.

[00:40:11] **Andrew:** So me and her work on a bunch of projects together. The evidence based comp stat is, is, is an idea to help police departments have more rigorous comp stat as opposed to just going in there and saying, Oh, crime went up 10%, crime went up 50 percent or crime went down 10 percent or things like that.

[00:40:27] **Andrew:** So,

[00:40:27] **Jason:** yeah, we'll put a link in the show notes. For, for that so people can find it. And this is a good segue because one of my questions for you as we kind of get onto the back half of the interview now and just talk a little bit about data being techie and in the law enforcement analysis profession you mentioned ComStat, it seems to me, and you can correct me if I'm wrong, that I'm really surprised That there's not more key performance [00:41:00] indicator development.

[00:41:01] **Jason:** And what I mean by that , what are the metrics that gauge a police department's effectiveness? And it seems like to me with com stat is where it seems like I have looked at. Comstat reports, and it seems like they're exactly the same. Like, if I just gave you one from, removed the dates, and said, here's one from now, and here's one from 20 years ago, sometimes you're not going to be able to tell the difference.

[00:41:27] **Jason:** Because they're doing the bean counting, doing the crimes, doing the maps calls for service, average response time. So, that surprises me there hasn't been more development on that to say like, okay, here's the best way to evaluate a police department.

[00:41:44] **Andrew:** Yeah, it's definitely the thing that I'm trying to work with Renee to improve upon that. And I think that , there's a couple different things. That that happened for that and it happens the same in my private sector role, too It's really hard to define [00:42:00] kpis that don't end up being totally superficial so the the ultimate thing that police departments are interested in is crime for them, I mean, there's other metrics that people are interested in but the sort of the bottom line is crime You that, that people are.

[00:42:15] **Andrew:** But, it's typically hard. It's not trivial. If there was like a trivial answer that you could go and reduce robberies by 50% like you probably wouldn't need CompStat to do it. So it's, it's a hard thing to do. , you have these ultimate metrics that you're interested in, but, all you can control Is your particular approach that you're taking you need that you need to monitor Those those final metrics so you need to monitor robbery but you also need to take into account what you're actually doing and in my experience a lot of different CompStat meetings, not only do the reports look the same, but the actual meetings themselves are very deja vu.

[00:42:59] **Andrew:** [00:43:00] So you can go to a meeting and somebody's like, well, I'm going to do X, Y, Z. And then you go to a meeting a month later

and you have new numbers and somebody's like, well, I'm going to do X, Y, Z, but there's no, there's no subsequent followup to see did that person actually do X, Y, Z last month. It's a, it's a simple thing, but it's something that must.

[00:43:20] **Andrew:** Departments don't do in that like monitoring. Okay. Somebody's going to do this and did they actually do it? So you need to monitor both the kpis as well as sort of you can't really control the end result for crime all that you can control is is the The different strategies that you've identified and make sure that you do those strategies to the best of your capabilities And that doing that strategy is an important part.

[00:43:47] **Andrew:** That's non You Trivial so a lot of police departments will have a hot spots program on paper But then not do any hot spots policing so you need both you need both the crime You need the [00:44:00] analysis to identify those hot spots And then you need people following up to make sure that people are doing things in the hot spots that you actually like want them to do and then after that it may be the case that those hot spots still don't even reduce crime because it's crime's not a trivial problem To solve so you sort of need all of those elements align, which is not just the crime analyst job.

[00:44:22] **Andrew:** It needs it needs collaboration with Patrol and command staff and you can do similar examples for detectives and everything like that as well but it basically needs to be Aligned in a way where the metrics are helping inform very specific decisions. It doesn't help to do a generic map and be like, my job's done as an analyst.

[00:44:45] **Andrew:** You need, you need to like, you need to be able to give, like, really specific, actionable products. So people can look at this and be like, okay, I'm going to do this in response to this, this thing that you've, you've built for me.

[00:44:57] **Jason:** Well, then how difficult is it [00:45:00] to measure effectiveness in that regard?

[00:45:03] **Jason:** Cause you were, you were talking about the example like, Oh, this month I'm going to do X, Y, and Z. And then how difficult is it the next month? Okay, here, I'm measuring the effectiveness of X, Y, and Z.

[00:45:14] **Andrew:** Yeah, so, it's definitely, I, I, I think, just, in terms of, we talk, we sometimes talk about outputs versus outcomes, I think a lot of times measuring the outputs, so did somebody actually go do the hotspots, I think that that's like a good start and then ultimately you do want to do metrics for the

outcomes, you want to see if robberies went down or not And i've developed some metrics too to basically use to to look at that.

[00:45:44] **Andrew:** So crime will go up and down sort of randomly over time i've developed different metrics to to identify Above and beyond the typical variants that you would expect in in sort of low count crime Data to try to help people identify if it's a if it's a big [00:46:00] decrease or not for those outcomes, but in terms of just measuring the so that's like the ultimate effectiveness in terms of that the outcome that people care about, but a lot of times there's no there's that there's no the middle part that to see if people actually did.

[00:46:16] **Andrew:** The patrols in the hot spots, or did they cut the vehicle stops in the D Dax places or things like that?

[00:46:22] **Jason:** I think to you're talking about coordination within the police department and police departments also struggle with coordinating with other city departments. Right, whether it's health or. Whatnot is there's this a lot of other coordination that I feel that police departments struggle with that They're like, okay, I know how to manage my own folks But now I'm having to reach out and coordinate with somebody, across the table at a at a city department meeting

[00:46:55] **Andrew:** yeah, it's definitely that that is one of the things in my experience with comp stat meetings because a [00:47:00] lot of times those meetings do have outside agencies involved with those and a lot of In in cities a lot of times it's driven by there's one really good person That's you know A good person from probation or parole who's really interested in doing the job is willing to put in that little It doesn't tend to be a lot of extra work, but just like to go to the meeting You know what?

[00:47:21] **Andrew:** I mean? In the cases that you can get those good individuals to do that the comp stat meetings are a good mechanism You to have that sort of cross agency collaboration. But, it's really happened since. You need good, you need good people and sort of, you need the, the, the right sort of special mix and people willing.

[00:47:40] **Andrew:** To do that extra work because it's not it's definitely not in their civil service contract to go to those Those different comp stat meetings, but when you can get those individuals that to me is like sort of the magic recipe and it doesn't really matter whether it's the da's office or probation or the

[00:48:00] different health workers to me that they're, they should, they should all be involved in those, those comp staff meetings.

[00:48:07] **Andrew:** There doesn't tend to be law enforcement sensitive information in those types of things. Those are good opportunities to have those, those cross collaborations. So

[00:48:16] **Jason:** what do you think is next for CompStat? What would you like to see?

[00:48:19] **Andrew:** Yeah, I mean, so in terms of, of next for CompStat is I, I talked a little bit about like more long-term professional development for the field as a whole.

[00:48:37] **Andrew:** The, the, the CompStat discussion is, is partially what does that look like from. A command staff perspective, but because it's a this is an analyst podcast. I'll talk about what that potentially looks like From the analyst role for that. So it's definitely not just on the analyst to like do comp stat 2.

[00:48:56] **Andrew:** 0 But I they'll definitely be a a critical part of that. I [00:49:00] talked about the more professional software development being able to, to write code makes it easier to not only do those types of regular reporting requirements, but also makes you, it makes it much easier to do the ad hoc requests as well.

[00:49:18] **Andrew:** You may have your compstat. Reports, but when you already automated those and made those look nice and whether it's a dashboard or whether it's a standard paper report that you email out or print out for those meetings. It doesn't really matter to me. But being able to automate that type of boring stuff allows you the time and flexibility to go in and do more advanced analytics on a regular basis.

[00:49:46] **Andrew:** I definitely think that there's value in utility to just doing those sort of boring. Stuff it needs to be coordinated with police departments to know what they're doing Which is slightly outside of the crime analyst role crime analyst isn't going to go and [00:50:00] go to patrol and be like, hey You need to be doing more hot spots patrols.

[00:50:03] **Andrew:** That's that's not going to work out very well for for most analysts, but there is opportunities for us as a field To grow and not just do These simple boring metrics and I don't mean boring in in terms of bad I mean that there's more things that we can be doing on a regular basis that may be

involved with doing more advanced analytics for active investigations so Helping to identify those particular serial crime patterns not just using not just going And reading the reports by having advanced analytics to help us identify those in an automated fashion.

[00:50:39] **Andrew:** It could be helping with real time crime analysis. It's not just these retrospective reports, but it's helping build applications in the police department to help your real time crime center identify trends as they're happening and not waiting till the end of the month. , those, those are just a couple different examples where if you pick up this more [00:51:00] advanced programming knowledge, and, not that the, not that the, my book has that, if you go and read it, you're not going to be able to go and make some, some uber nice math, but it's the start to be able to do that so , it's definitely intended for beginners, so even if you haven't had any programming experience, you should be able to pick up that book and learn, learn.

[00:51:19] **Andrew:** Not only how to write Python code, but like some of the more nuts and bolts of it, like how to download Python and what Python projects look like and how to run it from the command line and things like that.

[00:51:29] **Jason:** Yeah. Now is Python is, do you recommend purchasing a certain software or you mentioned downloading, is it just something that's just out there?

[00:51:37] **Andrew:** Yep. Python is all open source, so it's totally free. , and like I said before, I, I did, I've, I've worked with paid for software in my career, , like SAS and SPSS for statistical analysis, and for, for ESRI Python is free, so any analyst can go, go and download Python, run all the examples in my [00:52:00] book without paying any, any money for those.

[00:52:03] **Andrew:** And, it's definitely the case, to, to me it's a very good personal Career investment. So a lot of folks will go to the, the IACA conference. And I know I a bunch of the old heads will and I, and I think I've even seen you'd like do the access presentations, Jason at IAC. It's really the same reason.

[00:52:24] **Andrew:** I think it's a good. Personal investment to for analysts to learn python the same way as for for access. It's not just and the reason why Python is so commonly used for data scientists or just software engineering in general in the In the private sector is that python can really be used as a bridge between many different applications.

[00:52:47] **Andrew:** So Even if you have your access database you can use python to either do additional sql or do more advanced analysis or you can use python to [00:53:00] automate the boring stuff so say you had a You had to go online and submit a web report or pull data down from from a website on a regular basis You could automate that in python Or say you needed to build a little dashboard.

[00:53:14] **Andrew:** You could do that in Python as well. So it's not like a single application, but you can talk between all of these different applications. , to me, it's a really good tool to learn. The same way as it's a good, it's good to learn SQL. I actually have a big chapter in, in my book about using SQL in Python.

[00:53:34] **Andrew:** Python is not just like a singular thing but you can do a lot of different things with it

[00:53:39] **Jason:** so let me ask you this and i think this is this is where i want to get in terms of promoting the book how well. one analyze crime without coding?

[00:53:52] **Andrew:** So it's definitely the case that a lot of individuals, if I tell them, Hey, I think you should use [00:54:00] Python to do this, or I shouldn't say a lot, but some individuals will be like, well, I know how to do this in Excel already. So I'm not going to spend the time to, to learn Python. And it's true that you can basically do whatever in, in.

[00:54:14] **Andrew:** Excel that you want like you can you can code up whatever crazy VBA solution or copy and paste and do stuff on a regular basis that You want to the really the value add with Python is once you have the code written one time, it's done forever. , it definitely takes a little bit more time for you to go in and write that code than it does to do a pivot table in Excel.

[00:54:41] **Andrew:** But when you do that pivot table in Excel, you've doomed yourself to have to go point and click to four different things at a minimum, if not more, every time that you want to update that particular pivot table. With Python, you basically, you can automate that, particular end to end workflow to [00:55:00] pull the data do the manipulation of the data that you want it may be the case that getting that end result takes a little bit longer than it does to do the Excel pivot table.

[00:55:09] **Andrew:** But to me, pretty much anything that I need to do more than once, it ends up being a good particular investment. And then I talked

before how when you automate the boring stuff, when you automate those daily reports, you'll build up a library over time. Of doing the analysis in a way that will help you do those ad hoc requests on a much faster basis if you can figure out how to automate that compstat report you'll be able to figure out much quicker how to automate Building hotspot maps for a particular crime subset or pulling those those data out and and putting them into a bulletin or things like that it sort of snowballs in a way that to me doesn't tend to That, that when you have a bunch of disparate Excel spreadsheets doesn't.

[00:55:54] **Jason:** Yeah. What about some examples of using Python if the [00:56:00] analyst is more into case support and not necessarily prepping for

[00:56:06] **Andrew:** Yeah, in terms of the, the individual sort of intelligence focused analyst. So I, I've talked about it in the book has a lot of focus on doing data manipulation. But if you learn Python, you can do a, you can do a lot of different types of of different sort of automation projects that you want.

[00:56:31] **Andrew:** So say a popular thing in Python is scraping data, say that you had a particular web forum that you wanted to scrape on a regular basis, you would probably, it there's a good chance that you would use Python to do that, that particular application. In terms of, even though intelligence analysts a lot of times are focused on individual cases, it's still the case that they may want to do A particular type of, of analytics downstream from those, such as like social network [00:57:00] analysis, like what people would do in I2 , you can do that same type of SNA analysis in Python itself, whether or not you think it's, it, the, the biggest value add is for things that you do repeatedly over time.

[00:57:15] **Andrew:** So, I'm not saying that any, anytime somebody uses I2, it would make sense for them to go out and learn Python, but Python is free. Like I said, and there's that opportunity to do that. I definitely think it's a case that there's there's more advanced opportunities to do predictive algorithms and things like that in the intelligence sphere that involves both doing that, that case intelligence as well as like applying predictive models to identify those serial or those weird patterns, those outlier patterns that you wouldn't expect in data.

[00:57:49] **Andrew:** Not that that's super common, but it's definitely an area that could be more expanded in our field.

[00:57:54] **Jason:** Hmm, yeah, I was, and I don't know how many analysts are doing [00:58:00] telephone toll analysis, for instance. Thanks. Without a software, but if I can just imagine if you are getting the data from the telephone companies on a regular basis, that's going to have the same look and feel in

terms of that data and processing that is I could see being beneficial because again, you're probably doing the same things to each file that you receive.

[00:58:25] **Andrew:** Yeah, it's definitely the case that that's actually a very common example of software engineers will call it ETL. So extract, transform, load, and it's something that a lot of analysts do in their day to day. I didn't hear about that term until I went to the private sector, but it's something that almost all analysts who are doing anything sort of data related will end up doing.

[00:58:48] **Andrew:** . It may be taking those, those, like, those phone call logs, it may be taking GPS traces from the, the cell tower data, or things like that. Once you've essentially, you can write, in a common [00:59:00] particular pattern, is to write scripts to take that source data, which can often be messy, and you need to do a bunch of transformations and things like that to it.

[00:59:08] **Andrew:** And then load that into a database. So that to me is like a great example of, of automation in Python. That's very difficult to do in other particular software. So, so say you had a bunch of cell phone records, but they were formatted inconsistently, that would be something that it would be really good to do Python and basically have Python clean up those phone numbers before they get loaded into.

[00:59:35] **Andrew:** A subsequent database that would be difficult to do in purely sequel or or it would be very intensive, manually intensive to do it in Excel.

[00:59:44] **Jason:** All right, very good. All right. So again, we'll put the link to his book in the show notes and highly recommend it looking, looking into it. And it's, it's fascinating to see a, a technical book [01:00:00] put in the subject of crime analysis.

[01:00:02] **Jason:** Thank you So kudos to you. Thank you for doing this.

[01:00:05] **Andrew:** Yeah. Thank you very much, Jason. For folks listening. It's my website is crime de dash coder. com and then you can buy the book either an ebook or a paperback version. Right directly from our website and I know Jason will link it in the comments that dash sort of kills me.

[01:00:24] **Andrew:** Describing it, it online and stuff like that, but crime de dash coder dot com

[01:00:30] **Jason:** Yeah, are you gonna give us a promo code?

[01:00:32] **Andrew:** Sure, i'll do i'll do a promo code for the for the folks I'll need to go in and and put it up But but sure i'll give you a promo code jason to put in your link

[01:00:42] **Jason:** All right, very good.

[01:00:43] **Jason:** Thank you. . All right, . I want to get a little bit about training and certification for an analyst because Talking with charlie Giberti, you know charlie Giberti, right? Yes, we got to talking and he was like you look at The certification you look at some of the training.

[01:00:58] **Jason:** It's like it's not it's not too [01:01:00] technical Like there's not a lot out there that , okay, you can sit down there and you can learn how to extract data and do data management do some of the things that you're describing here I realized that the analysis field is very fluid and.

[01:01:16] **Jason:** Diverse so some analysts won't be asked to do any kind of data management at all and then others ones will get there and they're having to do a lot. But I just wanted to get your take on if your analysts listening, , they're maybe struggling with some common tasks and they want to get into more of these technical skills.

[01:01:41] **Jason:** , how do they do it?

[01:01:42] **Andrew:** Yeah. So that's really the exact reason that I wrote the book partially because you can go online and whether it's for Python or whatever software anymore, there's a ton of free. Now, just because something's free doesn't mean it's, like, worth [01:02:00] your time, and part of the reason why I wrote the Python book is if you go, you'll find examples of, of writing Python code all the time.

[01:02:10] **Andrew:** What's more important to me to basically learn, so somebody who's totally a total neophyte has not had experience doing that coding, is more basic, how do I run the code? How does the code look like in practice? How do I organize my files? I talk about the coding stuff in the book, but really to me the biggest value add And you can go on my website and see the first couple chapters of the book, which the first chapter has downloading Python and running a simple script from the command line, and then the second chapter introduces the basic Python object, so the basic sort of like, hello world writing code.

[01:02:50] **Andrew:** Examples and then later chapters in the book get into the more advanced project management what it looks like to fully automate an example [01:03:00] but that to me is the exact reason why I wrote the book is to help you People who don't have that experience have what I hope is a enough introduction to get started

[01:03:14] **Andrew:** I actually asked one of my friends to do this recently. I asked who I know didn't code I asked him to go to chat gpt ask chat gpt to write you a hello world Example in python and then actually run and execute the code You I sent him sort of off on that particular project and just to sort of get to there from the chat GPT instructions to being able to run a Python hello world example took took him several hours, took him around four hours.

[01:03:41] **Andrew:** You can sort of have that description, but there still tends to be a lot of sort of intermediate steps to actually do anything real. In practice that's the main reason why I wrote that book to to help people get started in a way that would be very difficult if you just go and Google [01:04:00] online resources that you're you may be able to write python code but you wouldn't be know how to like download it and actually query your own data or make a fully automated report based on the current web resources available.

[01:04:15] **Jason:** Yeah, no records of management systems. Does that come into play or there are certain ones you like and don't like or in terms of on it's, it's flexible enough to handle any RMS?

[01:04:28] **Andrew:** Yeah, that's the, that's one of the main benefits is that you can use the same, the same way that Crystal Reports uses that ODBC connection to most databases that are on your particular premises, you can use that same library.

[01:04:42] **Andrew:** Okay. To basically query your local data. I have a big chapter in the book on using SQL to query databases. And it's a big, it's a big deal with, with crime analysts. I know that, that a lot of times you need to get that IT person's permission to basically query, yeah. [01:05:00] the data. And then now with the web based databases as well, that adds sort of a different layer.

[01:05:06] **Andrew:** But , you should be able to do those types of connections. It's really something that Python excels at being able to do those different types of connections, whether it's online databases or local databases. To do those queries even talk a little bit about in the book because if you have a local RMS system a lot of times the reason that the IT folks are not don't want you to really

touch it is because you know you do a really big expensive query on that system.

[01:05:35] **Andrew:** You can actually mess up dispatch and folks being at having right access. They're not really meant to do those sort of analytic workloads. So I discussed doing basically pulling your RMS data overnight and then loading it into a special analyst database for you to do like more complicated analysis on that later.

[01:05:55] **Andrew:** That's an actual example that I talk about in the book.

[01:05:58] **Jason:** All right. Very good. [01:06:00] Very good. As we're finishing up here this, this discussion, AI, analysts should do what at the moment with AI?

[01:06:08] **Andrew:** Yeah, so you talked about Charlie Giberti a bit, and he has some good YouTube videos on his site where he shows using ChatGPT to help you write code.

[01:06:17] **Andrew:** , I think that that's really the best case use for analysts right now is sort of like a code helper. Like, how do I do XYZ, if you're using Python code, you can go in, the thing is you still need to learn, you still really need to learn the basics, so if you don't know any Python, you're not going to be able to go into ChatGPT and have it give you coherent advice.

[01:06:38] **Andrew:** It'll give you stuff wrong most of the time, but , if you have the start, you should be able to sort of debug the code and then edit it and update it over time and ask smaller questions to help you out. And that's really the best case use currently for AI. It's definitely not that I'm very bearish on the idea that AI will be able to take an end to end data [01:07:00] analyst job.

[01:07:01] **Andrew:** Partially because most people and it's and it's not a private versus public sector thing. It happens in the private sector all the time as well. People will come with very not specific enough requests. If you have a crappy request, the AI machine is going to spit out a crappy answer, basically.

[01:07:16] **Andrew:** Your job as an analyst is to take sort of that crappy request and sort of read between the lines and figure out what that person really wants. AI is not going to be able to do that anytime soon. And I don't, I think it's probably a fundamental thing that AI won't be able to do because the, The machine can only answer the question that you give it.

[01:07:32] **Andrew:** Part of our job as an analyst is to figure out the right question though, to begin with.

[01:07:36] **Jason:** Yeah, I think I've been hearing for 20 plus years that the computers are taking the analyst job. I am nearing 50 and I think I'm just going to ride out that they will not take over. By the time i'm still a working professional.

[01:07:53] **Jason:** Yeah. Yeah.

[01:07:54] **Andrew:** I'm not worried about that at all either. So,

[01:07:57] **Jason:** all right Very good. Anything [01:08:00] else I guess in terms of advice or Just on the topic. Is it just a final catch all?

[01:08:06] We've talked about the private sector stuff and I don't know the the You The audience for for the particular podcast sort of what breakdown it is of students looking to get into the field or current analysts who are listening in to other people's careers, but but to me picking up Python is a very good, not just, it's not only I think it's good for your personal productivity and your current job as an analyst, to me it's like a good career investment, the same as sort of getting a master's degree is a good career investment, so it opens up a lot of different opportunities, I wouldn't have my current career.

[01:08:48] **Andrew:** Private sector job. If I wasn't able to go to those interviews and like show examples of how I coded in my research career. But there isn't any reason that an analyst can't get that same type of [01:09:00] experience. And then it opens up a lot of different opportunities, not just in the public sector, but in the private sector to more advanced Roles which I know is a big thing for analysts because we don't necessarily have good career paths in especially in a lot of smaller department so to me it's just a really good career investment to learn python apply to your particular role and then that opens up other opportunities.

[01:09:23] **Andrew:** All

[01:09:24] **Jason:** right, well, let's finish up with personal interests and. Probably no one is going to be surprised listening to you for as long as we have now that you are into fantasy fiction

[01:09:35] **Andrew:** Yeah, so I I know like super exciting, right? So I have I have the last book in the wheel of time currently I haven't picked it up because I

get a little bit obsessive about them when I pick them up So if I pick up I may stay up late at night if I start, so I haven't started that one yet.

[01:09:52] **Andrew:** If you like funny stuff, If you're a Terry Pratchett fan, there's another author, Kevin Hearn, who has a lot of, like, more recent [01:10:00] funny stuff like that, in sort of that same vein. And then, the other one I'm reading, I may get his name wrong, but it's Islington, and it's The shadow of what was lost or something like that.

[01:10:10] **Andrew:** It's Islington and Shadow in the title. That's the other series that I'm reading at the moment. All right. Well, nice. So

[01:10:16] **Jason:** do you ever envision what you would do if you decided that you were going to write your own fantasy fiction?

[01:10:24] **Andrew:** Oh, gosh. I, I just know writing this nonfiction book, it would be, it would be, it would be a lifelong endeavor.

[01:10:35] **Andrew:** I feel like so I, I don't even have, I don't, I don't quite have delusions about, , writing a fiction novel. , the ones that are really good. You can, you can like tell that the author spent so much time not, not just the storyline, but sort of like conceptualizing the whole.

[01:10:53] **Andrew:** World and environment and interactions between people, it just seems overwhelming. Yeah, to me, honestly. So, [01:11:00]

[01:11:00] **Jason:** yeah. Yeah. And especially if they're just doing that up in their head abstractly. Right. As opposed to like, I think I would actually have to, if I was doing something like that, I'd probably have to have this like.

[01:11:13] **Jason:** Dungeons and Dragons table where I have all the players, I have all the characters out there and I have to, I have to actually see it and, and then kind of act out the, the scene, so to speak, in order to write it.

[01:11:26] **Andrew:** Yeah, I don't, I, I guess I don't know. So I know that there's manic writers like King and Patterson, they must just be manic and just like get the book out like one a day or whatever.

[01:11:36] **Andrew:** I have a feeling some of the fantasy ones that I like though, I bet you they do actually. Write it down. So, like, Tolkien made his own language. Like, he obviously had to write, write that down. So, I bet some of

these folks actually do map it out, those, and they make, and they make physical maps as well for, for their books.

[01:11:53] **Andrew:** So, I bet you they, they do sort of spend that time to sort of, like, do the timeline the same way that a crime analyst would do a [01:12:00] timeline.

[01:12:00] **Jason:** Yeah. Yeah. Speaking back to Charlie, like he made fun of me because we got, we got to talking about Harry Potter and I said, I couldn't keep up with all the names. I needed a night to chart in order to keep up with that series because there was just too many names and they would always have that big reveal at the end.

[01:12:18] **Jason:** And, and I couldn't keep, I'm, I'm old and can't keep up with , all those names.

[01:12:23] **Andrew:** Yeah. So I don't, I like, like I said, the, the one book I'm reading that the, the author's name Islington. I'm not very good about names either, but I can sort of picture people in my mind, but I don't, I, I won't necessarily be good about their names either.

[01:12:38] **Andrew:** I don't know. I'm missing that, I'm missing that particular connection to connect names to people.

[01:12:43] **Jason:** Alright. Very good. Well, our last segment of the show is words of the world. This is where you can promote any idea that you wish. Andrew, what are your words to the world?

[01:12:52] **Andrew:** Yeah, so One of the things I think is important for analysts is The [01:13:00] job as a not only a crime analyst But if you're an analyst in the private sector as well is to make the job What you want of it and and what I mean by that is we often have discretion for the types of analysis that we do.

[01:13:17] **Andrew:** So instead of waiting for the chief or somebody to come with you for a request, you can be proactive in the types of analysis that you do. That to me is like a big sort of important part of growing up as a crime analyst, understanding that I have the discretion, I have the capabilities and I'm the expert in analysis, so I should be the one deciding what I'm going to do in my day to day job.

[01:13:43] **Andrew:** And to me, that's, that's an important role as analyst because the chief isn't necessarily going to know those right questions. You need to be the expert to help them know what they should be looking at.

[01:13:54] **Jason:** Nice. Well, I leave every guest with you giving me just enough to talk bad about you later, [01:14:00] but I do appreciate you being on the show, Andrew.

[01:14:04] **Jason:** Thank you so much and you be safe

[01:14:06] **Andrew:** yeah thank you very much jason for having me

[01:14:08] **Mindy:** thank you for making it to the end of another episode of analysts talk with jason elder you can show your support by sharing this and other episodes found on our website at 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 leapodcasts@gmail.com.

[01:14:27] **Mindy:** com till next time analysts keep talking.