# Guide for Prospective Crime Analyst Hires

Mentorship Committee

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The profession of crime analytics and its study has become more ubiquitous across law enforcement agencies. Position types and skills required vary from agency to agency, however basic capabilities remain relatively consistent. This guide intends to offer those pursuing a crime analyst position with advice for enhancing their skills and preparing them for interviews with the intention of getting hired. This is not a guide for attaining a position with any particular department as hiring requirements differ widely. Note also that some of the information is more specific to the United States and may not be applicable to non-U.S. prospective hires. The guide is not intentionally exclusive to non-U.S. members, but terms, definitions, and noted certifications are more specific to U.S.-based individuals.

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# Education

## What degree do I need?

Simply put, there is no single degree one *needs* in order to get a job in crime analysis; however, some are more conducive to the job than others.

At the end of the day, a crime analyst is at heart a data analyst. A common phrase is 'data is data', and that generally holds true. Whether you are putting together a trend analysis of equity sales at a bank branch or motor vehicle thefts at a grocery store parking lot, you are conducting data analysis. Each industry has its own jargon and terms, and you will be exposed to the typical alphabet soup of acronyms regardless of where you work, so don't get too worried about memorizing what every lettered agency and acronym stands for. That being said, some terms are helpful, such as NIBRS (National Incident-Based Reporting System) and UCR (Uniform Crime Reporting) and so a degree in law enforcement can serve as an introduction to how agencies interact and what the current landscape is trending towards. Criminal Justice degrees are also good for understanding best practices and what is being taught to sworn police personnel as well as current research related to law enforcement (i.e., the "why" of crime theories).

Other degrees that some agencies may prefer or prepare you for the type of work you may be conducting include but are not limited to mathematics, statistics, geographic information systems, and computer science. Investigative Analysts who are embedded with detectives will likely need to learn law enforcement-specific software and applicable laws, however general data analysts who focus on trends and research would likely benefit more from these more non-law enforcement specific degrees.

## Do I need an advanced degree?

Depending on the agency, some prefer (or even require) advanced degrees, but in general, no, an advanced degree is not always needed. That being said, should you be competing for a vacancy with other individuals with similar backgrounds, an advanced degree could help give you an advantage. An advanced degree could also assist with other gaps you may have in your bachelor's degree. For example, an individual with a criminal justice bachelor's degree may want to pursue a masters in statistics. Conversely, someone with a degree in computer science may want to attain a master's in criminal justice. Masters level degrees and higher are typically more intense studies of a specific subject, so it is always good to pursue something you have an interest or aptitude in. If you specifically want to work as a crime analyst and have trouble with or dislike statistics, but enjoy mapping and spatial analysis, then consider an advanced degree in GIS/mapping. A job in law enforcement is by no means guaranteed, or

as you may find out, not a good fit, so pursuing a degree you enjoy and believe you will have success in is more important than trying to guess what hiring managers are most interested in.

Based on the type of position you are looking for and where you would like to work, conduct research on job websites to identify what current requirements are. Just like minimum requirements for police cadets, they can change, so you will likely see degree type and desired skill commonalities among agencies.

# Experience

## Do I have the right type of experience?

Just like education, experience can vary, and no single position is required. A job posting may suggest or even require "2-3 years as a crime data analyst". As mentioned previously, "data is data", so these requirements may be flexible. For example, 2-3 years as a crime data analyst may be *preferred*, but if you have been working as an operations analyst for a grocery chain and routinely put together figures on loss prevention, this is almost certainly applicable. Note that hiring managers or those who post to job sites may be operating under old posting requirements, may not have direct communication with actual crime analyst managers, or even be the ones vetting applications. That is all to say, if you generally fit the hiring requirements do not feel any apprehension about applying. Worst case scenario you are not asked for an interview. If you are asked for an interview and then questioned about your background, this is your opportunity to explain why you are a good fit based on the skills and background you do have.

If the posting is for an investigative analyst, then they are likely more concerned about law enforcement or investigation experience, however if it is for data analysis, then a strong background in working with data is likely of more importance. In some instances, it may seem like a good idea to "get your foot in the door" by taking a more entry level job, such as with a police records unit in which you conduct data entry. Some agencies do promote within, however if the job skills differ then it might be more worthwhile to work as a data analyst in a non-law enforcement capacity to build expertise more applicable to the position. For example, if a hiring manager has a choice between someone with two years working as a front desk administrator within the same police department and someone who has been a data operations analyst for four years at a software company, the data analyst is likely going to have the skills needed to conduct the job and need less training.

Also, consider law enforcement adjacent agencies. Analysts who work for dispatch/911, fire, and district attorneys, typically work with similar data as crime analysts, use the same software, and have many of the same tasks. These types of positions will help you obtain relevant job skills that satisfy many requirements concerning 'crime data'. Prior investigative or intelligence experience in related fields is also helpful, in particular for Investigative Crime Analysts. Examples include fraud investigation experience at private companies as well as military or federal agencies. Some intelligence professionals find it difficult to discuss confidential experience, so if this applies to you then consider how you can still speak to your skills and work prior to an interview.

Regardless of whether you begin your career within a law enforcement agency or another analytic position, you should work towards filling in the gaps of your experience. If you do work within a police agency, but not in an analytical capacity, get used to the systems of record and build your analytical skills through certifications and training. If you are not working for a police agency, then continue studying the theories and practices by staying current on the latest studies and keeping your foot in both worlds of analytics and law enforcement.

## Do I have enough experience?

Experience can come in many forms. Should you consider part-time jobs in your years of experience? Do non-paid internships count towards years of experience? If you work as a data analyst at an apparel company for two years and as a crime analyst for two years at a local police department, does that equate to four years as a crime data analyst? In short, yes. Experience is as good as you present it. People will sometimes discount the work they performed when they were younger or part-time, such as a restaurant server or secretary, but this is a mistake. Everyone had to start somewhere, and if you worked while you were in school while candidates with similar backgrounds took summers off, this can show you have initiative, solid work ethic, and the ability to multi-task. You should never stretch what your job responsibilities are or were, as hiring managers will almost certainly see through this, but they will also likely appreciate honest answers where you can explain the specific skills and lessons learned from any type of past experience.

Quantity does not equate to quality, but if you have never worked in law enforcement it could help to look for additional opportunities within it to show you know what type of environment you are getting into and convey a desire to work for police. Examples include temporary internships, experience with law enforcement-adjacent professions (law offices, probation and parole, fire departments, etc.), or voluntary opportunities (e.g., police foundations, victim advocacy, and ride-a-longs).

# Skills

## What software do I need to know?

Every law enforcement agency uses different software and hardware. There are third-party companies for every aspect of law enforcement data collection and analysis (this will become readily apparent when you attend your first IACA conference). Skills, including technical, should be viewed from the perspective of pillars, not actual tools in the majority of instances. There are very few programs that every agency uses, outside of perhaps Microsoft Excel. This is perhaps the one software program you should not only be familiar with, but be advanced in.

## What skills should I focus on?

### Skills Base: Research & Expertise

As an analyst you not only offer investigative and analytical support but also expertise on best practices and research. This is also related to critical thinking, which can be a skill learned in any manner of positions, both law enforcement and otherwise. Operational knowledge includes but is not limited to functions of crime analysis, identifying patterns, the SARA model, evidence-based policing (also data-driven and problem-oriented), evaluating effectiveness (which is inclusive of statistical analysis), and ethics. Familiarizing, practicing and even getting certified (if you do not have a criminal justice degree) will serve as a good base for the following pillars.

### Pillar I: Data Analysis

A good analyst is able to work with any type of data to identify trends, anomalies, and be able to explain them in a meaningful manner. Data analysis is comprised of several steps, including input by users, collection and cleaning through a data warehouse, and extraction and visualization for review, interpretation, and presentation. A thorough understanding of data input best practices is key to guiding users when developing new methods of data collection. Working with and understanding these basics will help you understand how to work with a variety of tools. Programs that can be used to collect data include Microsoft Excel and Access, Google programs like Sheets and Forms, survey tools such as Survey Monkey, and third-party software like the various record management systems (e.g., Axon, Versaterm, Mark43) used by agencies.

Understanding how and where the data is stored is the next key step in the process. The most basic is in the form of single workbooks like you would find in Excel, up to relational databases like Access and Microsoft SQL. The ability to understand and write SQL queries is a great skill to set yourself apart from others who are only familiar with more basic programs. Understanding other programing languages will further set you further apart, including R (a free, open-source programming language and software environment primarily used for statistical computing and graphics) and Python (a general-purpose programming language used in web development, data analysis, machine learning, and automation). You may never need to use any of these programs, but they will certainly give you an edge and could even help you introduce new processes and efficiencies to a department that is not utilizing them. Proficiency in any programming language also shows you have the aptitude to learn new programs.

In between collection and extracting is data cleaning. You will need to understand the database you are working within, its limitations, and how to manipulate the data (e.g., through queries or advanced Excel techniques) to ensure the data you are working with is representative of what you are attempting to analyze. This is where in addition to technical knowledge you will also need contextual information to present the data. For example, you may be asked to provide data on response times. For these statistics you will likely need several time stamps such as the dispatch time and the on-scene arrival time. Having contextual knowledge about how this data is collected is necessary in order to provide the most accurate analysis. If officers have to manually update time stamps, then there is likely some human error involved. What if an officer is dispatched to a scene and forgets to record their on-scene time? What if they cannot be dispatched until they record the on-scene time, but do so on their next shift? Knowing these possibilities will help you set parameters. Using the previous example may entail removing any response times that extend beyond several hours as they are likely an entry error and not a true reflection of response times and may skew your data.

The final step is extracting data and analyzing/visualizing it. Again, charts and statistics can be created in Excel, so it should serve as your basis for understanding, but you will certainly need to learn how to use newer programs as they become more standardized across the industry. Coding and query writing may be necessary to some positions when data is stored in formats other than spreadsheets such as relational databases. Many departments also invest in data visualization tools like Tableau, Microsoft Power BI, and i2 Analyst's Notebook. These programs make it easier to create charts, graphs and other visualizations in a quicker and more automated fashion. Some have free versions available, and it is recommended you get acquainted with their functionality. As with more advanced querying and code writing software, a department may not currently be using them, but having this skill could set you apart from other candidates.

### Pillar II: Mapping

Hotspot Policing, Pattern Analysis, Predictive Policing, Resource Optimization, Public Data Sharing, Spatial Analysis, Criminal Networks; in order to conduct all of these, you will need to know how to create and interpret maps. This is synonymous with GIS (Geographic Information Systems). Esri is one of the most used software companies, however this program is quite expensive, so enrolling in a course or accessing through a university is likely your best bet to learn how it works. Even having a basic understanding of how it works and conveying that you have used it before is a good step in the right direction. New companies and software are emerging each year though, and many offer both mapping and analytical software in one package, so familiarity with any mapping software is a plus. Free products like Google Earth Pro and QGIS are also useful. Google Earth Pro has a much easier learning curve (and is also less powerful) but can get you used to working with shape files and learning basic import and export skills. QGIS is both free and open-source.

Investigative analysts typically use more specialized software to the industry, in particular those dealing with mapping and cell phone analysis. Again, showing an aptitude for learning new software is the most important skill you will need to convey, however past experience using programs like Nighthawk LEOVision, GeoTime by PenLink, and CellHawk from Leads could be beneficial to know or at least understand.

### Pillar III: Presentation

Good data is only as good as it is presented and interpreted. You may have rock solid facts and figures, but if you cannot convey information in an understandable and informative way your hard work may not pay off. To borrow phrasing from statistics, in addition to providing the descriptive figures (e.g., the prevalence of crime), you also need to be able to interpret the results. Related to Pillar I, added context can help you interpret findings and convey actionable insights from your data.

Being a good writer and speaker will put you in a much better position as a well-rounded analyst than someone who is just technically proficient. Taking courses in public speaking is a good starting point. Getting comfortable with the law enforcement environment can also help with building your confidence for presenting actionable insights. Interning, working part-time, or participating in ride-a-longs for a law enforcement agency is a great way to get acclimated. Investigative analysts in particular need to be good at presenting results, as they are often called to testify in criminal trials. You likely will not have experience in this area as a current or recent student but conveying your aptitude for explaining complex processes to a variety of audiences is a necessary skill.

Microsoft PowerPoint is still the most widely used presentation software, so becoming an expert in this product is a necessity. Another program becoming more widely used is Canva, but having experience with any type of presentation software should provide you with the skills to adapt to whatever technology is being utilized in a department. At the end of the day, confidence is what will make you a good presenter. If you are confident in your skills, your presentation, and your final product, the rest is just a matter of practice.

## What other training and resources are available?

### IACA Crime Analyst Training

A comprehensive listing of Training offered by IACA can be found on the website.

12-Week Online Classes: for a fee (based on whether you are an IACA member) you can attend a variety of online classes ranging from essential skills and fundamentals of crime analysis to crime mapping and investigative analysis. Students should expect a time commitment of 3-5 hours per week, per class. Students are also awarded a certificate, which is another way to fill in any skill gaps you may have when reviewing hiring requirements.

Webinars: webinars are typically 1–2-hour long sessions, often held over Zoom, and currently cost $15 for IACA members or $30 for non-members (but may also be free depending on the host or sponsor). A webinar library is also available for members to access an archive of over 100 videos, inclusive of topics in both Italian and Spanish.

### IACA Certification

IACA has designed a certification program based on a point system that acknowledges work experience, demonstrable knowledge, skills and abilities, academic work, on-the-job training, and contributions to advancing the profession. Of the two available certifications, The Law Enforcement Analyst – Foundational certification program is based on a collection of core competencies that analysts are expected to possess, with the only prerequisite being that the applicant be a current member of IACA.

### Law Enforcement Training

There are a variety of additional training and accreditation programs available outside of university courses. Those sponsored or approved by federal agencies such as FEMA or the Department of Homeland Security are a good place to start since they are more applicable across the industry. For investigative analysts, a 'Foundations of Intelligence Analysis Training', which is offered by a variety of companies and agencies, can serve as a good foundation for basic training. Other groups who offer similar training include the International Association of Law Enforcement Training Analysts (IALEA) and the National White Collar Crime Center (NW3C).

Arizona State University offers guides for policing problems, which are freely available and can serve as a great introduction to terminology and current methods. Similar resources that law enforcement agencies themselves use, and ones you should familiarize yourself with for literature reviews, include The UK's College of Policing Crime Reduction Toolkit, The National Institute of Justice's Crime Solutions Rated Programs, George Mason University's Evidence-Based Policing Matrix, and the Reducing Crime program.

The IACA website offers additional Resources.

# Job Search

## Job postings and searches

For jobs in the public sector, the go-to website is Government Jobs. 'Crime Analyst' is going to be the most popular phrase to search, but do not limit your scope. Other job titles for the same or similar positions include but are not limited to 'Investigative Analyst' and 'Police Analyst'. As mentioned prior, working as a data analyst in any capacity is the best way to begin to learn what skills and applicable software programs you may be using on the job. Do not rely exclusively on any one site though. Not every agency uses the same website, so if you are interested in a particular city make sure you visit their actual hiring page or reach out to identify what job sites they do use.

The IACA Forums page can also be a helpful resource. There is a category, 'Job Postings', devoted exclusively to job postings as well as volunteer opportunities. The added benefit of using the forums is that in addition to a link to the application, you can see who the person making the posting is and follow up with any interest.

Look for similar keywords from Crime Analyst postings to see which skills are in demand. Phrases used among Crime Analyst postings and general data analyst postings may include but are not limited to "statistical sampling", "pattern detection", "forecasting", "trend reporting", "data extracting", "compiling graphs", "monthly reporting", and "analyzing large datasets". As you become more familiar with and see patterns in job descriptions you may want to widen your search based on these phrases.

Examples of positions that work with similar or related data include Fire Departments, Dispatch (911), Probation and Parole Services, District Attorneys, Federal Law Enforcement (e.g., FBI, DHS, ATF, Secret Service), and private company loss prevention services. Non-law enforcement fields will also utilize similar skills and can include job titles such as Operations Analysts, Management Analyst, and simply Data Analyst.

## IACA Groups and Associations

Getting involved with your local IACA affiliates is another good way to stay in the loop for upcoming hirings. If an agency already has a relationship with you and knows you are an involved member of the community, this can only further your chances of future hiring. For U.S.-based individuals, the Regional Associations page offers an interactive map with contact information for the various groups. Many groups have their own website and contact information that may include local job postings as well as networking opportunities. There are also Chapter Associations that are inclusive of non-U.S. based analysts. To learn more about potential local chapters in your area you can email chapters@iaca.net or iacavpmembership@iaca.net.

## Interview Preparation

**If you are reluctant to apply for a job, do not be**. Worst case scenario you are not invited for an interview, best case you are hired, and in between you can learn how to improve for your next application. There will always be an ever-changing carousel of buzz words and phrases used by hiring managers, so getting some practice is always helpful. You can only prepare for what you know to expect, and many agencies will ask the same questions. **Learn from your mistakes and prepare for questions you felt you did not have a good answer to for future interviews**. Do not get discouraged, get better. You will rarely know all of the questions and have every skill listed in a posting, but you can speak to your willingness to learn and cite previous examples of such.

Hiring managers will often ask you about technical proficiencies and then inquire about examples. An example question may be, “do you have any experience writing SQL queries for big data sets, and could you elaborate on that?” If you do have such experience, obviously speak about that and how it may relate to the job. If you do not, you can still **explain how you have experience using related software**, how you learned that software, and that you would be comfortable and look forward to learning something new. An example answer might be, “I haven’t specifically worked in SQL; however, I have used other relational databases such as Microsoft Access. I used Access tables to relate various data sets for a statistics course last year, and my understanding is that the programs are very similar. I took an online course for Access and want to extend my capabilities, so would also feel comfortable learning how to utilize similar programs like SQL.” Additionally, you need to show how you continue to improve and seek opportunities to do so. If you apply for a position and are not hired, but re-apply a year later, be sure that you mention what steps you have taken to improve your credentials (specifically related to any the hiring manager mentioned in the year prior), rather than explaining what you intend to do.

Although the profession is expanding, crime analysis is not available in every city and there is a good chance you will have to relocate. **Hiring managers need to know you are willing to move to an unfamiliar area and that you have a basic knowledge of the city**. Conduct some background research into the population and basic crime stats. Many cities post data to their websites, however if they do not, use the FBI’s Crime Data Explorer (or applicable government website outside of the U.S., such as the Office for National Statistics for England and Wales) to identify key metrics and how they are similar or differ from national trends. Referring to this research shows your interest in the city and shows that you have a basic understanding of what crimes may be a focus in that jurisdiction. This will also help you learn terminology that is used within the industry.

Another aspect of data analysis is **critical thinking**. Technical skills are important, but being able to put them to use is equally necessary. You should **be able to demonstrate past experiences with tasks or projects that required you to utilize creative problem solving**. As mentioned prior, this does not have to be solely from law enforcement experience. You have almost certainly used creative problem solving in part-time jobs, volunteering gigs, and even your personal life. If you were a member of a sports team and used a unique technique to improve yourself or your team, then mention it.

Finally, **ask questions**. Regardless of the result of the interview, try to take away as much information as possible for your next application. Asking questions also shows you are willing to learn, grow and have an invested interest in working for the department. Examples include, “what challenges do you foresee for this position initially and long-term,” “are you able to provide me with any feedback on this interview,” “are there any questions I left unanswered that you have concerns about or would like additional information?” And if you do have questions about the position do not hesitate to ask them.

Although your main goal is to get hired it is helpful to understand whether you will be a good fit for a particular team and more specific questions will help you identify this.