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The Prosecutor's Crime Analyst

AN ESSENTIAL EMPLOYEE



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Introduction

Crime analysts are essential staff for a modern prosecutor's office. The need for this unique position is driven by the explosion of digital evidence used in the investigation and prosecution of criminal matters. Crime analysts are 21st Century detectives whose expertise is a critical complement to the traditional law enforcement capabilities of the police. This paper focuses on the role of a crime analyst in a prosecutor's office.

Definition of a Crime Analyst

The term "crime analyst" covers a broad range of duties and roles. Some crime analysts specialize in only some of the duties, while others assist with a wide variety of tasks. There are essentially three types of crime analysts who serve in a prosecutor's office. It is not uncommon for a prosecutor's crime analyst to fulfill parts of all three functions.

The Overview Crime Analyst

The overview crime analyst examines data and intelligence to identify crime patterns and criminal networks, and summarizes their findings through statistics, graphs, maps, and timelines. This analyst also prepares high level summaries and presentations about the work of a prosecutor's office, concerning issues such as caseloads, types of crime prosecuted, diversion programs, and budget.

The Case-Specific Crime Analyst

The case-specific crime analyst gathers evidence in support of investigations and prosecutions in many ways, including reviewing social media posts, analyzing cell phone records, and conducting public records and criminal records searches. They help with discovery and organize digital evidence that can be used for grand jury presentations, trials, or hearings. The analysts may also testify about the evidence recovered.

The Technical Crime Analyst

The technical crime analyst has a high level of technical expertise and can complete tasks, such as downloading cell phones, converting surveillance videos to usable formats, and conducting sophisticated searches of the internet. They may also manage the flow and storage of intelligence data coming into the office and assist with the technical aspects of court presentations.

Hiring a Crime Analyst

Professional Backgrounds

Crime analysts commonly possess the following professional backgrounds:

- **Paralegals:** Paralegals who are already familiar with the criminal justice system can develop an expertise in data collection, social media research, and needed presentation formats.
- **Former Military or Police:** The military has long used intelligence officers, who function much like a crime analyst. These officers have many of the needed skills for a prosecutor's crime analyst. Police departments also have experienced crime analysts that can be recruited to come to a prosecutor's office.
- **College or Master's Degree Graduates:** Crime analyst courses are offered in college and master's degree programs. Advertising at these educational institutions can yield skilled employees. College graduates who have studied a relevant field, such as criminology or data analysis, can also be good candidates. A prosecutor's office should consider offering internships to these types of students to vet candidates.
- **The National Guard:** The National Guard has trained crime analysts who have been assigned to some prosecutor's offices.¹ These analysts tend to be skilled in geographic information services (GIS), as well as intelligence gathering techniques.
- **Current Staff:** Offices that do not have the resources to hire a crime analyst can fill this role by training other staff, such as investigators, paralegals, or interns that have shown an aptitude for this type of work.

Sources for Hiring

Aside from recruiting from within a prosecutor's office, there are many avenues for recruiting a crime analyst, including:

- Local universities
- Professional organizations
 - International Association of Crime Analysts, <https://www.iaca.net/>
 - International Association of Law Enforcement Intelligence Analysts, <https://www.ialeia.org>
- [Indeed.com](https://www.indeed.com)
- [Stackoverflow.com/jobs](https://stackoverflow.com/jobs)



¹ National Guard, *National Guard Counterdrug Program*, [https://www.nationalguard.mil/Portals/31/Resources/Fact%20Sheets/Counterdrug%20Fact%20Sheet%20\(Dec.%202017\).pdf](https://www.nationalguard.mil/Portals/31/Resources/Fact%20Sheets/Counterdrug%20Fact%20Sheet%20(Dec.%202017).pdf) (last visited 09/06/2020). See also Nadine Wiley De Moura, *National Guard Counterdrug Program Celebrates 30 Years*, U.S. ARMY, 08/21/2019, https://www.army.mil/article/226032/national_guard_counterdrug_program_celebrates_30_years (last visited 09/06/2020).

Training

Crime analysts need an understanding of the criminal justice process, as well as technical skills essential to finding and analyzing digital evidence. Offices should invest in training crime analysts both on-the-job and through training programs.

On-the-Job Training for a Crime Analyst

The most common training for any analyst is on-the-job training and peer learning. Analysts who are promoted from other positions within the office often learn their craft from colleagues and analysts from other agencies. One analyst recommended asking teenagers how they are communicating as a quick way to learn about emerging technologies.

All analysts, regardless of their specialty, need a good understanding of how the criminal justice system works in their county. Shadowing prosecutors and attending some prosecutor trainings is advantageous.

Training Programs

Crime analysts must continually update their skills to stay abreast of rapidly changing technology. Even experienced crime analysts need to be vigilant by ensuring that they are keeping up with new technologies. The following are just a few of the training programs offered for crime analysts and prosecutors, some of which are free. (See [Appendix](#) for detailed training suggestions from the New York County District Attorney's Office).

- **Bureau of Justice Assistance (BJA):** BJA has published an Analyst Professional Development Road Map, which outlines a path for training and career development.² BJA also published the Crime Analysis Toolkit which has a wide variety of helpful materials.³
- **The National White-Collar Crime Center (NW3C):** NW3C offers online trainings on technology topics and provides hands-on training on complex electronic evidence issues.⁴
- **The International Association of Crime Analysts:** This group provides extensive trainings and publications, and hosts conferences.⁵

2 National Public Safety Partnership, *Analyst Professional Development Road Map, Version 2.0*, <https://www.nationalpublicsafetypartnership.org/clearinghouse/Resource/845> (last visited 08/28/2020).

3 Bureau of Justice Assistance, U.S. Department of Justice, *Analysis Toolkit*, <https://bja.ojp.gov/program/it/analysis-toolkit> (last visited 12/15/2021).

4 National White Collar Crime Center, *About Us*, <https://www.nw3c.org/> (last visited 08/28/2020).

5 International Association of Crime Analysts, *About the IACA*, <https://iaca.net/about-the-iaca/> (last visited 08/28/2020).

Analytic Products

Crime analysts use a variety of products to perform their tasks. Some of the products assist with searches of digital evidence, while others provide methods for presenting the evidence in a usable format. A robust working knowledge of Microsoft Excel is important. Some of the products are offered free for government or public use. See [Appendix](#) for a list of popular programs and some tips for Microsoft Excel. These tools are constantly evolving and improving; thus, it is important for crime analysts to stay on top of the latest technology.

The products allow crime analysts to do many useful things, including:

- Scrape and save social media posts.
- Create maps indicating areas of high and low crime.
- Develop visual networks of inter-related people.
- Assemble timelines of related events.
- Edit and improve video content.



Training the Prosecutors

ABA Ethical rules require lawyers “to maintain the requisite knowledge and skill, [and that] the lawyer shall keep abreast of changes in the law and practice, **including the benefits and risk associated with relevant technology**” (emphasis supplied).⁶ Thus, it is also crucial that prosecutors develop a basic understanding of digital evidence and other technologies to guarantee that investigations and prosecutions are as thorough and ethical as possible.

Typical Work of an Overview Crime Analyst

An overview crime analyst provides a high-level view of crime trends and prosecutor performance metrics. Some prosecutor’s offices rely on crime analysts in police departments to generate reports on crime trends. However, police crime analysts typically do not have access to prosecutor data, so they are unable to assist with prosecution-related reports.

⁶ ABA Model Rule 1.1, Comment 8, https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_1_competence/comment_on_rule_1_1/ (last viewed 12/18/2021).

The tasks of an overview crime analyst can include:

- Summarizing crime trends by crime type and location.
- Creating maps of crime hot spots by arrest or charges.
- Compiling timelines of crime patterns, such as non-fatal shootings or car jackings.
- Developing prosecution management reports, such as the number of cases by charge or trends in prosecutor caseloads.
- Preparing presentations for elected officials, community members, funders, and the media.
- Conducting research on prosecutor programs and collaborating with researchers on crime data.
- Developing data dashboards for the public.



Typical Work of a Case-Specific Crime Analyst

Crime analysts who support specific cases handled by a prosecutor are akin to 21st Century detectives. They can uncover evidence, analyze digital information, and summarize it for court proceedings. They are often called as trial witnesses. In some offices, prosecution investigators serve this function. Police analysts or detectives can also fulfill some of these tasks. In many instances, police detectives work closely with the prosecutor's case-specific crime analysts throughout the pendency of a case.

Basic Tasks

The basic tasks of a case-specific crime analyst can include:

- Obtaining social media records, IP address records and various other third-party records kept by such entities as iCloud, Google, or Citizen.
- Analyzing call detail records and cell site information.
- Obtaining audio and video evidence, including:
 - 911 calls
 - Surveillance videos
 - Body-worn camera footage
 - Email records
 - Financial records

Investigative Stage

At the investigative stage, analysts can bring together many sources of information to identify investigative leads and develop probable cause for search warrants or arrests. At this stage, the case-specific crime analyst will engage in various activities, including:

- Performing background investigations on suspects or witnesses through database and internet searches.
- Collecting and reviewing digital evidence to identify leads.
- Corroborating witness statements through analysis of digital evidence.
- Compiling multiple evidence sources to develop a timeline of events or provide context for the crime being investigated.
- Assisting with the drafting of search warrants by summarizing the existing evidence.
- Capturing and preserving evidence from public social media postings of suspects, witnesses, or general reactions to the investigated incident.



Preparing for Grand Jury or Preliminary Hearing

Once probable cause for an arrest has been established, analysts can prepare for grand jury presentations or preliminary hearings by synthesizing evidence into succinct narratives that can assist with the efficient presentation of evidence. In some instances, the crime analyst may testify as well. At this stage the crime analysts are working on:

- Procuring the documents required by law that assist with authenticating business records containing digital evidence.
- Preparing discs or hard drives containing exhibits for the presentation.
- Preparing a compilation of multiple video angles or sources.
- Creating a map of pertinent locations to the case or locational information for the proposed defendant or witnesses.
- Compiling a timeline of relevant evidence.
- Redacting information that cannot be introduced as evidence, such as information unnecessarily prejudicial to the defendant, or confidential information about an undercover officer or witness.

Discovery and Trial

Once a defendant is charged, analysts can help with the discovery process and trial preparation. During the discovery and trial preparation phase, crime analysts focus on:



- Ensuring third party compliance with search warrant demands, by reviewing the information received and ensuring that evidence is provided in a timely manner.
- Reviewing, documenting, and cross-referencing evidence as it is received.
- Redacting digital and audio files pursuant to discovery laws and protective orders.
- Calculating the size of digital discovery files to allow the prosecutors to coordinate the transfer of files to defense attorneys.
- Preparing a discovery letter for the court and defense counsel with a detailed record of disclosures.
- Compiling criminal convictions of witnesses to the extent required by statutes.
- Preparing exhibits, summaries, and presentations to be used at trial.
- Testifying at trial regarding the recovery of digital evidence or introducing a summary compiled from voluminous digital evidence.

Typical Work of a Technical Crime Analyst

The technical crime analyst has a higher technical skill set regarding digital evidence. This role can sometimes fall to an IT director who may have many other pressing responsibilities. Some police departments or forensic laboratories have units that can perform some of these tasks, however, the prosecutor's requests will not always receive priority. A technical crime analyst performs the following tasks:

- Extracting data from cell phones, computers, and other types of electronic devices.
- Converting digital evidence, such as video evidence that uses a proprietary player, into viewable and easily presentable formats.
- Redacting recordings, video evidence, and other digital media as needed by the prosecutor.
- Providing the defense with evidence in easily accessible formats and assisting with technical issues related to discovery.
- Assessing and assisting with courtroom technology needed for the trial, to include setting up technology in the courtroom and assisting with evidence presentation during trial.
- Managing the flow and storage of crime data.

Ethics

Although a detailed discussion of this topic is beyond the scope of this article, prosecutors must consider various ethical concerns related to the retrieval and analysis of digital evidence. The crime analysts working for prosecutors must be well versed in what they can and cannot do as it relates to digital evidence. The following provides a few examples of areas that require some ethical guidelines:

- When and how a crime analyst can view the private social media pages of suspects, defendants, and witnesses.
- How to manage and document the scope of search warrant extractions and review of evidence from phones, computers, and other repositories of digital evidence.
- When, how, and if to use undercover social media accounts.
- How to redact and modify digital evidence while still maintaining original versions.
- How to collect evidence within the scope of a witness or defendant's consent.
- How to identify and respond to privilege issues within the evidence a crime analyst is reviewing.

Conclusion

Digital evidence is already a significant part of evidence in criminal cases and will only become more important in the years to come. Justice requires digital evidence to be reviewed and analyzed so that criminal matters can be fully evaluated. As a result, expertise is needed in the collection, analysis, and presentation of digital evidence. Unfortunately, prosecutors do not have the time or expertise to properly manage the ever-expanding amount of digital evidence that flows into their offices. Thus, crime analysts must become an integral part of a prosecutor's office to provide essential proficiency and support for the investigation and prosecution of cases. It is encouraging to note that the emerging crime analyst profession provides an exciting and rewarding career for those interested in the criminal justice system.

Appendix

Analytic Tools

- Accessdata (Forensic Tool Kit) www.accessdata.com
- Accurint
- Adobe Photoshop
- Amped Software Products
- ArcGIS Mapping
- ArcGIS Online (Online Interactive Maps)
- Audacity
- Autopsy (SANS) this is a Free forensic tool (sleuthkit.org)
- Blacklight (This is predominantly for MACs) www.blackbagtech.com
- CarFax for Police
- Cellebrite
- CLEAR
- Crystal Reports
- Dcode (Technical time conversion)
- Encase (Guidance Software)
- eTrace (Firearms Tracing)
- ffmpeg (convert video)
- Forensic Explorer (forensicexplorer.com)
- Google Earth
- HIDTA PIMS Facial Recognition
- i2 Analyst Notebook
- ISO ClaimSearch
- JABS (US Marshall Prison Search)
- Leads Online
- Leap
- LENS (Federal)
- Microsoft Movie Maker
- Microsoft Office
- NDCAC Tools
- NDEX (National Data Exchange – FBI)
- N-Force (ATF Database)
- Notepad++
- Office's Case management system
- Oxygen (Phone Analysis) www.oxygen-forensic.com/en/products/oxygen-forensic-detective
- Palantir
- Pen-Link
- Perceptive Workgroup Search
- PerpHound (NW3C)
- Python
- qGIS
- R
- ShotSpotter
- SnagIt
- Spotlight
- Surveillance Players
- Thunderbird (Mozilla email client – handling SW compliance)
- TLOxp
- Truecrypt/Veracrypt
- Voyager
- VLC Video Player
- X1 Search
- X1 Social Discovery
- Xanalis Link Explorer
- XMind

List of Trainings for Crime Analysts

Law Enforcement/Analyst

- Open Source Intelligence (Training & free tools)
 - <https://inteltechniques.com/>
 - <https://www.toddington.com/>
 - <http://www.automatingosint.com/blog/> (programming focused)
- FBI LEEP (cyber classes) <http://www.iacpcybercenter.org/topics/training-2/free-training-for-law-enforcement/>
- National White Collar Crime Center (NW3C) <https://www.nw3c.org/online-training>
- National Domestic Communications Assistance Center
 - <https://ndcac.fbi.gov/>
 - AskNDCAC@fbi.gov
- Northeast Counterdrug Training Center
- SEARCH Online Investigations (<http://www.search.org/>)
- SANS, CCE Boot camps (different vendors offer this), all the Forensic companies offer training for their own product so use what is familiar for you.
- National Computer Forensics Institute (<https://www.ncfi.usss.gov/ncfi/>)
- Federal Law Enforcement Training Center (<https://www.fletc.gov/>)
- High Intensity Drug Trafficking Area (HIDTA)
 - Los Angeles HIDTA - Instruq (<https://instruq.co/>)

Excel (free)

- <https://excelexposure.com/>
- <https://www.gcflearnfree.org/excel2016/>
- <https://support.office.com/en-us/excel>
- <https://exceljet.net/>
- YouTube (excel tutorial playlists, specific tasks, etc.)

Programming

- **Organized:**
 - General Assembly - boot camp
 - Coding Classes - general
- **Self-help (general - many are free):**
 - Lynda
 - Udemy
 - Skillshare
 - Khan Academy
 - Code Academy
 - Coursera
 - YouTube

- **Self-help (Python specific):**

- <https://automatetheboringstuff.com/>
- <https://www.learnpython.org/>
- <https://www.codecademy.com/learn/learn-python>
- <https://learnpythonthehardway.org/>
- <http://docs.python-guide.org/en/latest/intro/learning/>
- http://timothybramlett.com/Learn_Python_Lesson_1.html
- <https://www.python.org/about/gettingstarted/>
- <https://www.reddit.com/r/learnpython/wiki/index>
- <https://github.com/EbookFoundation/free-programming-books/blob/master/free-programming-books.md#python>

- <https://github.com/Michael0x2a/curated-programming-resources/blob/master/resources.md>
- <http://opentechschool.github.io/python-data-intro/core/text-files.html>
- <https://www.hackerrank.com>

- **Self-help (R specific):**

- Programming language for statistics/graphics
- <https://www.datacamp.com/>
- <https://www.rstudio.com/online-learning/>
- <http://tryr.codeschool.com/>
- <https://www.r-bloggers.com/how-to-learn-r-2/>

Data Management Techniques

- Regular Expressions:
 - Searching for patterns rather than specific text (ex. phone numbers, emails, addresses, etc.):
 - <https://regex101.com/> -- learn and test regular expressions
 - <https://spreadys.wordpress.com/> (forensic video blog relating to surveillance video)
 - <http://www.search.org/resources/e-crime-investigative-tools/>
 - <http://www.search.org/resources/publications/law-enforcement-tech-guides/>
 - VBA for automating Microsoft Office tasks (Excel, Word, Outlook, etc.)
- Remember techniques are based on the type of case and where data may exist on a device (think as if you are the end user)

Excel Shortcuts

- `ctrl + arrow` = jump to the end of a section
- `shift + arrow` = extend selection by one cell
- `ctrl + shift + arrow` = extend selection to end
- `ctrl + a` = select all
- `ctrl + shift + l` = toggle filters on/off
- `ctrl + c` = copy
- `ctrl + x` = cut
- `ctrl + v` = paste
- `ctrl + alt + v` = paste special
- `F2` = jump into a cell to edit it
- `F4` = toggle relative/absolute references for a range
- `ctrl + ;` = enter current date
- `ctrl + shift + ;` = enter current time
- `alt +` = Starts to select the menu on the toolbar.
You can do almost anything in Excel this way.