Comparison Of The Crime Scene Sketching Capabilities Of Smartdraw And Autocad Software

Bhavesh Mali[1], Bhuwan Patidar[2]

[1]Student, Institute of Forensic Science, Mumbai University, Mumbai
[2]Student, Department of Interior and Space Planning, Institute of Design, SAGE University, Indore

Abstract

Crime Scene Sketching is a very important tool for forensic scientists or investigators with the future perspective. This sketching only helps in the reconstruction of the crime scene and along with that it also helps in relating the crime scene with the different types of evidences we have found from the place of crime. Crime Scene sketches are prepared manually by the investigators. Now a days we are dealing with a lots of software which can acts as a better replacement for the sketching of the crime scene and it will help us create a modified sketch of the crime scene with less mistakes and more authenticity. There are a lots of software such as AutoCAD, SmartDraw, Sketch Up, etc. which are designed for preparing the crime scene sketches. Out of all the software known till date, the AutoCAD and SmartDraw are the two most important software which have proved their own authenticity in the field of Sketching of the scene of crime. Here in this paper we have tried to differentiate among both the software for the ease of use and tried to find the best software for the sketching of the scene of crime. The differentiation among both the software was established after preparing the sketches of the scene of crime.from the software and a proper analyses and result is framed as per the work conducted on to the software. On the basis of this Resultant only a final concluding statement is framed for the research work.

Keywords – AutoCAD, Crime Scene, SmartDraw, Sketching, Software

Highlights –
- Crime scene sketching using application software for the ease and authentication.
- Crime scene sketching as the important part of the crime scene investigation.

1. Introduction

Crime scene investigation includes a crucial component called crime scene drawing. Crime scene sketches can be divided into two categories: preliminary sketches and finished sketches. At the crime scene, rough sketches are made that give a general picture of the scene, indicating where the evidence is located and highlighting significant elements. Final sketches are more thorough and scaled according to measurements acquired on the spot. Plan view and elevation view are the two perspectives that are employed in crime scene sketching. While elevation view sketches describe the landscape from the side, plan view sketches illustrate the scene from a bird's-eye perspective. The arrangement of the crime scene and the relationships between various objects and pieces of evidence are visualised and understood by

the investigators through these sketches. Sketches of crime scenes are useful tools for recording and explaining the specifics of a crime scene. They can be used to present evidence in court as well as to aid in the study and reconstruction of the crime. For a complete and successful crime scene investigation, accurate and precise sketches are required. [1]

For the documentation of crime scenes, a new generation of three-dimensional (3D) measuring equipment has been created. With the help of this approach, crime scenes should be documented in a way that is more perceptive, thorough, and impartial. It is made up of three separate 3D scanners: Laser scanner used to measure the crime scene's total dimensions. Scanning with a situational structured light source allows for more precise measurements. The most intricate details of the scene are scanned using a sophisticated structured light scanner. [2] While conventional methods of manual crime scene drawing are still necessary, they may not be accurate enough to determine the precise positions of physical evidence and people. This highlights the necessity of proper documenting of crime scenes, including mapping and sketching. When used in conjunction with conventional techniques, computer-aided crime scene sketching is an invaluable tool for creating high-quality sketches. The advantages of using CAD software include the simplicity with which sketches can be updated and edited, as well as the creation of precise measurements and 3D models. Overall, the important of accurate and complete documentation for investigative and evidential purposes is one of the useful insights into the usage of CAD in crime scene documentation and sketching. [3]

Another program that can be used to draw diagrams and sketches of crime scenes is SmartDraw. There are many other templates available, such as floor layouts for homes, businesses, and flats, as well as outdoor or indoor crime scenes like alleys and workplaces. Users can customize their diagram by dragging and dropping any of the thousands of pre-made legal symbols available, such as guns, gloves, blood splatter, and even dead bodies. Hundreds of symbols for everything required at a crime scene, including furniture, body outlines, footprints, and weapons, are also included in SmartDraw. [4]

2. Materials and Methods

2.1 Crime Scene Sketching in SmartDraw –

Select the crime scene template from the list of available options in SmartDraw. The crime scene template can be found in the "All" or "Popular" categories. Add walls, windows, doors, and other structural components using SmartDraw's floor plan features to precisely represent the crime scene setting. Walls may be simply resized and edited to correspond to the space's real proportions. Include crucial information in your sketch, such as the victims' location, blood splatter, and any interesting objects like weapons, footprints, dirt, or clothing. A library of symbols for furniture, body shapes, footsteps, weaponry, and other objects is available in SmartDraw. Simply drag or stamp the components you require onto your diagram after choosing them from the library. Make careful to include written details in your crime scene drawing in addition to the visual components. Measurements, explanations of the evidence, and any more pertinent data may be included. SmartDraw offers industry-standard measurements, ensuring that your crime scene sketch is precise. Your diagram will accurately depict the crime scene because everything is to scale. Your crime scene sketch can be simply edited and customized with SmartDraw. You can change the information, add notes, and polish the specifics as necessary.

One can make a precise and expert crime scene sketch for forensic and investigative reasons by using these procedures and the tools of SmartDraw.

2.2 Crime Scene Sketching in AutoCAD –

Obtain all the required details regarding the crime scene before drawing a sketch. This covers the room's dimensions, where things are located, and other crucial information. Make a basic drawing of the crime scene on paper to start. You'll be better able to see the layout and see any potential problems thanks to this. Accurately measuring the locations of each item shown in the rough sketch is the most important stage in generating a crime scene diagram. Measure the room's size and the placement of its contents with a measuring tape. Keep track of all the measurements and information. Create the sketch in AutoCAD once you have all the relevant data and measurements. Create a precise representation of the crime scene using the measurements and specifics. Include specifics like furniture, doors, windows, and other significant features in the sketch. To distinguish between various elements in the sketch, use different colors and line styles. Include pertinent details on the sketch, such as the date, time, place, and case number. Check the sketch to make sure the crime scene is shown correctly. If there are any mistakes or inaccuracies, make the required revisions to the sketch.

Overall, exact measurements and great attention to detail are needed while using AutoCAD to create a crime scene sketch. These procedures will help to draw an accurate and thorough drawing that will aid detectives in remembering specifics of the crime scene.

3. Results

Figure 1 Crime Scene Sketching via SmartDraw Software

X= 10' 4"   Y= 1' 6"
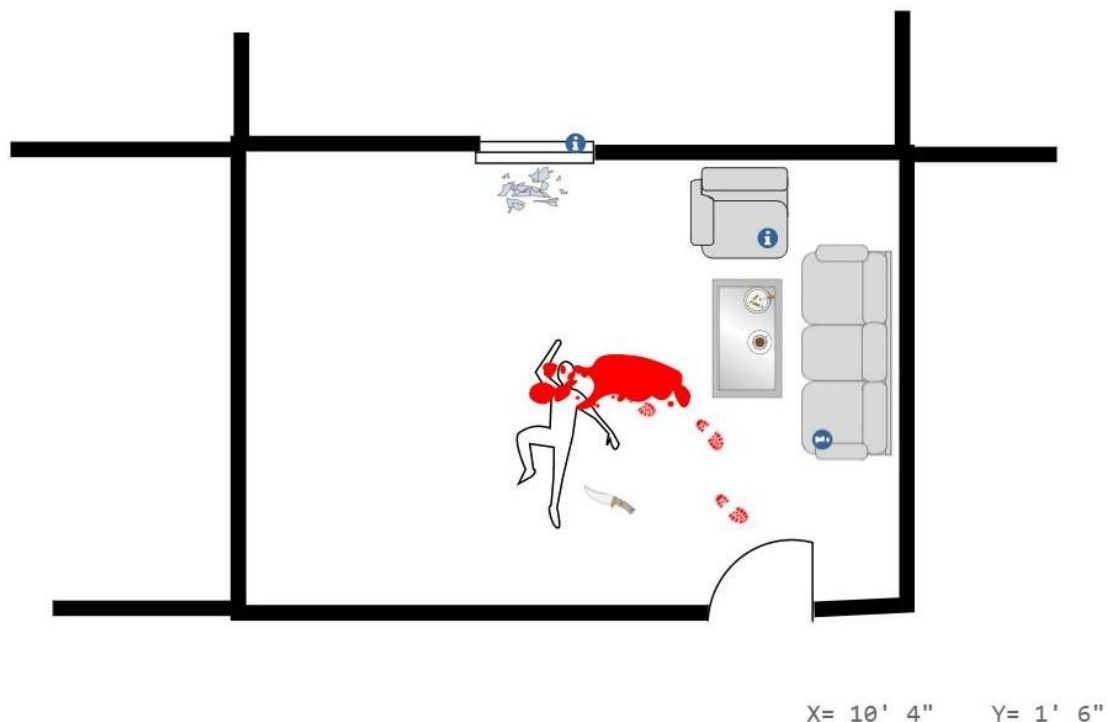
3.1 Crime Scene Sketching Via SmartDraw Software – You never have to start with a blank page with SmartDraw because it has more diagrams, templates, tools, and symbols than the competition. SmartDraw is accessible both online and offline, and it can be used from any device with an internet connection. A full import and export for Visio® is included with SmartDraw. As well as importing, modifying, and saving Visio® stencils, you may also import, edit, and export Visio® files (VSD & VSDX). Confluence, Jira, MS Office, GSuite Apps, Box, Trello, and other services are just a few of the connectors that SmartDraw offers for simple file sharing, archiving, and collaboration. You can input files and have SmartDraw generate diagrams for you using its automated features. Additionally, shapes can be added, moved, and deleted with the click of a mouse, and they will be automatically connected and formatted.

Figure 2 Crime Scene Sketching Via AutoCAD Software
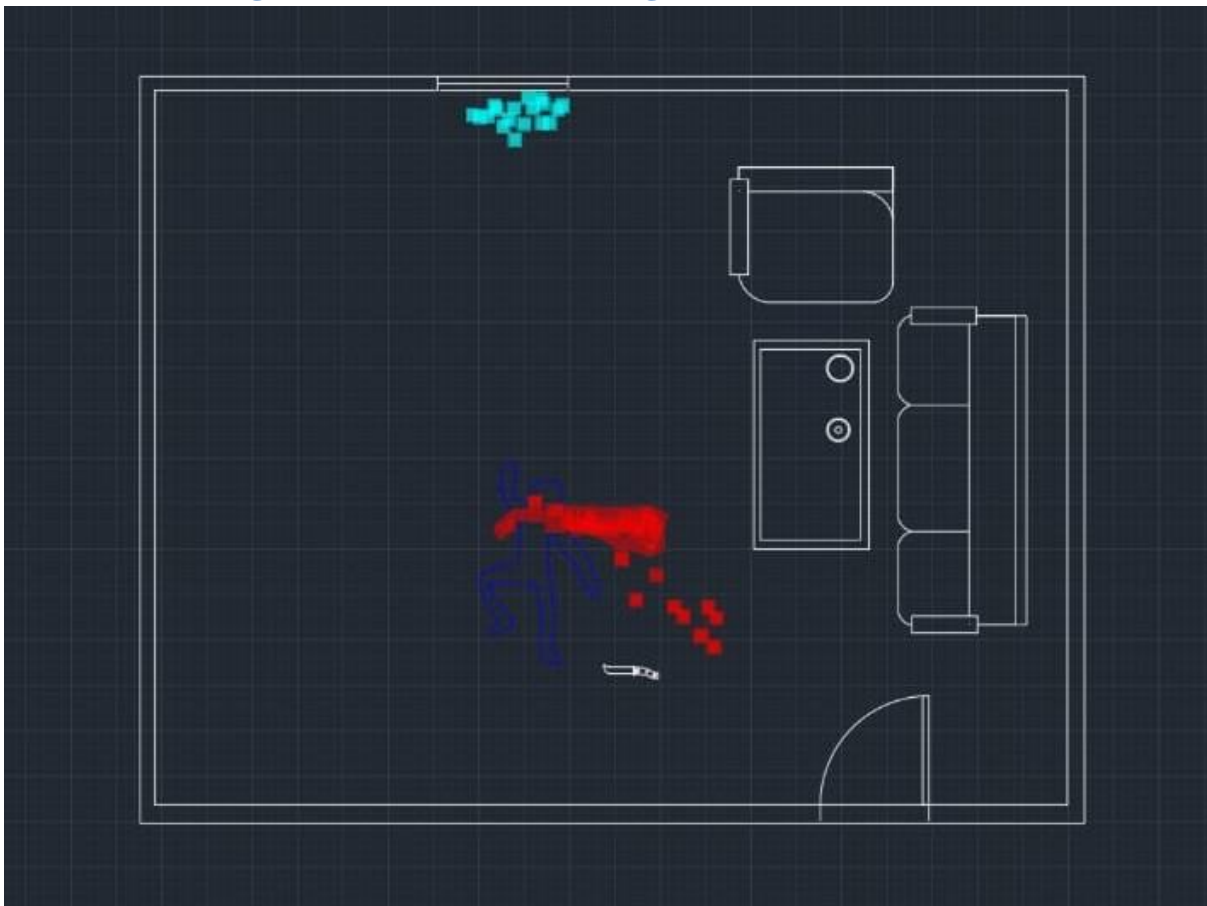
3.2 Crime Scene Sketching Via AutoCAD Software – Users have the freedom to view, create, edit, and share drawings on the move using any smartphone or tablet thanks to native mobile apps for iOS and Android. By enabling users to operate without an internet connection and then synchronizing any changes when their connection is restored, offline access increases user productivity. Users can construct accurate 3D models of their concepts with the use of solid, surface, and mesh modeling technology. Users of 3D navigation tools can fly, walk, swivel, and orbit around their 3D models. AutoCAD facilitates online collaboration with the import of PDF and DGN files, DWG and picture references, sheet set management, location data, and online maps.

4. Discussion

Table 1 Comparison among AutoCAD and SmartDraw Software

Sr. No.	Based	AutoCAD	Smart Draw
1.	Android Mobiles Use	Yes, we can use AutoCAD in Android Mobiles.	No, we can't use Smart Draw in Android Mobiles.
2.	iPhone Mobiles Use	Yes, we can use AutoCAD in iPhone Mobiles.	No, we can't use Smart Draw in iPhone Mobiles.
3.	MacBook Use	Yes, we can use AutoCAD in MacBook.	No, we can't use Smart Draw in MacBook
4.	iPad Use	Yes, we can use AutoCAD in iPad.	No, we can't use Smart Draw in iPad.
5.	Login Problem	AutoCAD has short term login time process.	Smart Draw has long term login time process.
6.	Easy to Use	AutoCAD is easy to use, compared to Smart Draw.	Smart Draw is not easy to use, compared to AutoCAD.
7.	Web-based	Yes, AutoCAD is used in web.	Yes, Smart Draw is used in web.
8.	2D Form	Yes, AutoCAD can be used in 2D Form.	Yes, Smart Draw can be used in 2D Form.
9.	3D Form	Yes, AutoCAD can be used in 3D Form.	No, Smart Draw cannot be used in 3D Form.
10.	Used in Business	Yes, we can use AutoCAD in the Business and this is very helpful for Business purposes.	Yes, we can use Smart Draw in the Business but less because we cannot use this software in every Business purposes.
11.	Money Value	AutoCAD has more money value comparison to Smart Draw.	Smart Draw has less money value comparison to AutoCAD.
12.	Crime sketching	AutoCAD s not for crime sketching.	Smart Draw is use for crime sketching.
13.	User Interface	Advanced, with a steeper learning curve User-friendly and easy to.	User-friendly and easy to use.
14.	Human Figure Creation	May require more effort to draw figures.	Offers easy-to-use tools for figures.
15.	Drawing Precision	Excellent precision and accuracy.	Moderate precision for basic sketches.
16.	Hidden Evidence	Suitable for visualizing hidden evidence.	May not have advanced tools for this.

Keep in mind that both AutoCAD and SmartDraw have their strengths and weaknesses, and the choice depends on the investigator's specific needs, level of expertise, and the complexity of the crime scene. AutoCAD is more suited for professionals who require high precision and advanced 3D visualization, while SmartDraw offers a more user-friendly interface and simple 3D elements for basic sketches.

4.1 Comparison Statement - Let's compare SmartDraw and AutoCAD for crime scene sketching:

User Interface: SmartDraw is known for its user-friendly interface and ease of use, making it accessible to both beginners and experienced users. On the other hand, AutoCAD is more advanced software with a steeper learning curve, typically used by professionals in various fields, including crime scene investigation.

Human Figure Creation: SmartDraw offers easy-to-use tools for creating human figures, which can be helpful for illustrating the positions and movements of people involved in the crime scene. In contrast, AutoCAD may not have dedicated tools for this purpose, requiring more effort to draw accurate human figures.

Drawing Precision: AutoCAD excels in precision and accuracy, making it suitable for creating detailed and precise crime scene sketches, especially when it comes to measurements and scaling. SmartDraw may not have the same level of precision as AutoCAD.

3D Visualization: AutoCAD is primarily a 3D modeling and drafting software, allowing for in-depth visualization of crime scenes in three dimensions. SmartDraw, while capable of some 3D elements, may not offer the same level of sophistication as AutoCAD in this regard.

Hidden Evidence Visualization: AutoCAD's advanced tools and capabilities make it more suitable for visualizing hidden evidence in furniture or complex crime scene layouts. Its ability to work with intricate details and layers can aid investigators in analyzing and understanding various scenarios.

Cost and Accessibility: SmartDraw is generally more affordable and accessible compared to AutoCAD, which can be costly and requires specialized training for full proficiency.

Ultimately, the choice between SmartDraw and AutoCAD for crime scene sketching depends on the investigator's specific needs, level of expertise, and the complexity of the crime scene. SmartDraw may be a more straightforward and budget-friendly option for basic sketching, while AutoCAD offers greater precision and advanced features for complex crime scene investigations.

4.2 Conclusion Statement - Rather than AutoCAD and SmartDraw there are several apps and software available for crime scene sketching. Some of the popular ones include:

SketchCop® FACETTE is specialized app designed for forensic artists and investigators, offering tools for creating accurate facial composites based on eyewitness descriptions.

iCrimeFighter app allows crime scene investigators to sketch crime scenes digitally, including the placement of evidence, measurements, and annotations.

ScenePD is a comprehensive crime scene diagramming app that offers tools for 2D and 3D scene mapping, measurement tools, and evidence markers.

CrimePad is another mobile app designed for investigators to document crime scenes, capture photos, and create diagrams with annotation features.

Crime Scene Sketch is available for android devices which allow users to create simple crime scene sketches with basic drawing tools.

Remember that the effectiveness of these apps may vary based on your specific needs and the complexity of the crime scene. For professional investigations, it's essential to select an app that aligns with your team's requirements and workflow.

Further it can be concluded that SmartDraw is specially designed for the sketching of the crime scene whereas AutoCAD is designed for the designing of various articles for business perspective and the above specified apps are also designed for the same purpose. Each app has its own specialities and features for the purpose of sketching the scene of crime. So as per the complexities of the scene and features one requires for the sketching of the scene of crime, the accurate application software is to be taken in consideration for crime scene sketching.

5. References

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