

Visualizing Tools: Leveraging Data Visualization to Enhance Understanding and Insight

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Abstract: This paper emphasizes potent method for converting complex information into understandable and accessible representations using data visualisation tools. The importance of visualising tools in many fields, decision-making in various domains, new developments in data visualization, assistance in trend analysis, essential characteristics of various visualising tools, and enabling users to alter and study data interactively are all explored in this paper. Users are empowered by visualising tools to study massive datasets, spot trends, get insights, and effectively communicate discoveries. The study also examines particular applications in a variety of industries, including business, healthcare, education, and scientific research. People and organizations may better grasp complex data, make wise decisions, and have a significant effect in their industries by utilising the power of visualising tools.

Keywords: Data visualization, Sparse coding, Decision tree. Datasets, Multivariate correlation

1. Introduction

The technique of presenting data and information in a graphical or visual style is known as data visualization. It involves presenting complex data sets in a form that is simple to comprehend and analyses utilizing charts, graphs, maps, and other visual components. Effectively communicating ideas and patterns hidden within the data is the main objective of data visualization. Data visualization makes it simpler for viewers to spot patterns, correlations, and outliers. Making educated judgements, spotting opportunities, and comprehending intricate relationships are all made easier as a result.

2. Categorization and Description of Works

- Tableau
- Plotly
- Fusion Charts
- Domo
- Matplotlib
- Bar chart
- Chart Blocks
- Dundas Data Visualization
- Qlik
- Infogram
- Highcharts
- Piechart

- Tableau Public
- Google Data Studio
- Gephi
- Klipfolio Inc
- Google Charts
- Wrapper
- Zoho Corporation
- Looker
- Leaflet
- Qlik Sense
- Microsoft Excel
- Sisence

3 Performance Analysis of the Proposed Methodology in terms of Existing and proposed approach

The Numerous industries, including business, science, medicine, education, and the social sciences, use data visualisation. Here are a few such use scenarios:

- **Business:** To track and analyse performance measures like sales, revenue, and customer behaviour, businesses frequently utilise data visualisation. Making informed judgements based on data insights and seeing patterns, trends, and opportunities are both beneficial. It is also helpful in producing interactive reports and

dashboards that can be sent around teams and divisions.

- **Science:** In scientific study and analysis, data visualisation is a crucial tool. Complex datasets like DNA sequences, weather patterns, and satellite footage can be explored and visualised by scientists in order to glean insights into underlying patterns and correlations. Additionally, it aids in the dissemination of study results to the general public and other scientists.
- **Medicine:** In order to visualise patient data, including medical records, lab findings, and imaging investigations, medicine uses data visualisation. It aids doctors and other medical workers in the diagnosis of illnesses, monitoring the development of patients, and locating potential risk factors.
- **Education:** To assist students understand difficult topics and data, data visualisation is employed in the classroom. Students can use it to make interactive simulations, timelines, and maps that help them understand historical events, scientific principles, and social phenomena.
- **societal Sciences:** To analyse and portray data about societal trends, behaviours, and demographics, data visualisation is frequently used in the social sciences, including sociology and economics. It aids in the exploration and comprehension of intricate social phenomena like income disparity, voting behaviour, and social networks.
- **Journalism:** Data visualisation is increasingly used in journalism to offer data-driven stories and news articles. It enables journalists to explain difficult material in a more approachable and compelling way and gives readers a greater grasp of the data underlying a narrative.

3.1 Data Visualisation Tools Used In Various Applications:

Many sectors utilise data visualisation technologies to show complex data in an aesthetically pleasing and understandable way. Here are a few well-known programmes created with data visualisation software:

- Business Intelligence Dashboards
- Education Sector

- Financial Analysis
- Geographic Information Systems(GIS)
- Health And Medical Reasearch
- Social Media Analytics
- Supply Chain Management
- Energy Monitoring And Analytics
- E-Commerce And Customer Analytics
- Sports Analytics

3.2 Data visualisation tools usage or purpose in Education sector:

Tools for data visualisation have found useful uses in the field of education, helping to enhance student performance, track learning outcomes, and give administrators and teachers new perspectives. Here are some examples of how data visualisation software is applied in the field of education:

Student Performance Analysis: Data visualization tools assist educators in analysing student performance information, such as grades, test results, and attendance records. Teachers can spot trends, patterns, and places where pupils might be struggling by visualising this data. This makes it possible to improve student results with targeted interventions and individualised instruction.

Learning analytics: Within digital learning systems, it is possible to monitor and assess students' progress and engagement using data visualisation tools. Educators can find effective instructional tactics, alter content, and give individualised feedback by visualising data on student interaction with online resources, completion rates, and time spent on activities.

Dropout Prevention and Early Warning Systems: Data visualisation tools can assist in identifying students who are at danger of dropping out by analysing a variety of indicators that affect student dropout rates, including as attendance, behaviour, and academic achievement. Data visualization-based early warning systems can inform educators to take action and offer the necessary support to stop dropouts.

Curriculum planning and alignment:Data visualisation tools let educators and administrators evaluate the success of the curriculum and its connection with learning objectives. It is possible to spot gaps, repetitions, and other places where the curriculum could

be improved by visually representing curriculum maps, learning progressions, and assessment data. This allows for more focused instruction.

Assessment Data Analysis: Data visualisation tools make it easier to analyse assessment data, both formative and summative, in order to assess student learning and instructional success. Insights into areas of strength and weakness can be gained via visual representations of student performance, item analysis, and item difficulty, enabling educators to make data-informed decisions about instruction and curriculum development.

School performance Monitoring: Data visualisation tools assist administrators and decision-makers in tracking and comparing performance indicators at the school level. In this, statistics on standardised test results, graduation rates, attendance, disciplinary actions, and demographic data are visualised. It makes it possible to pinpoint interventions, identify achievement gaps, and evaluate the success of educational policies and programmes.

Financial analytics: Data visualisation technologies can be used in educational institutions to analyse financial data. Administrators can use visualisations of budget allocations, spending trends, and revenue sources to make wise financial decisions, spot areas for cost-savings, and guarantee financial management transparency.

Reporting to Stakeholders: The presentation and sharing of educational data to various stakeholders, such as parents, school boards, and policymakers, is made easier by data visualisation technologies. Data visualisation facilitates data-driven debates and decision-making by making complex information simpler to comprehend and analyse.

The education sector may benefit from important insights into student learning, instructional strategies, and school performance by utilising data visualisation technologies. This will enable the sector to make decisions based on the best available evidence, enhance educational outcomes, and provide specialised interventions to help students succeed.

3.3 Data visualisation tools usage or purpose in Health and Medical Research:

Tools for analysing and presenting complex medical and healthcare data visually are frequently used in the health sector. Here are some applications for these instruments in the medical field:

Patient Health Monitoring: Monitoring the health of patients is made easier with the use of data visualisation

technologies. Healthcare professionals can view real-time data from medical devices, such as glucose metres, blood pressure monitors, and heart rate monitors, to get a clear and concise overview of a patient's condition.

Disease Surveillance and Outbreak Management: Monitoring and analysing the spread of illnesses as well as controlling outbreaks are done using data visualisation technologies. Health organisations can recognise hotspots, follow the evolution of diseases, and make educated decisions about resource allocation and intervention tactics by visualising data on a geographic map.

Electronic Health Records (HER): Massive volumes of patient data are produced by Electronic Health Records (HER) systems. Data visualization technologies can be used to translate this data into interactive and intuitive visual representations. The information is then simple for doctors and other healthcare professionals to navigate and interpret, leading to better clinical judgement and patient care.

Public health analytics: To examine population health trends and patterns, health organisations and researchers in public health use data visualisation tools. They can identify high-risk groups, plan public health measures, and effectively communicate health messages by visually portraying data linked to illness prevalence, risk factors, and demographic information.

Clinical Research and Trials: The analysis and presentation of research findings from clinical trials and studies is aided by data visualisation technologies. Large datasets may be graphically explored and interpreted, correlations can be found, and researchers can efficiently share their findings with stakeholders.

Operational and Resource Management: Data visualisation technologies can be used by health systems to improve resource allocation and operational effectiveness. Healthcare administrators can spot bottlenecks, streamline processes, and make informed decisions by visualising data on patient flow, resource utilisation, and performance measures.

Curriculum planning and alignment: Data visualization is a powerful tool for communicating complex health information to patients, carers, and the general public. People can better comprehend health concepts and make wise decisions about their well-being by seeing health statistics, treatments, and preventive actions in a graphic format.

Overall, by converting complex healthcare data into visual representations that are simple to comprehend, decipher, and act upon, data visualisation tools serve a key role in the health sector. They enable policymakers,

academics, and healthcare practitioners to take well-informed decisions that will enhance patient outcomes and promote public health.

4. Methodology and Results

The Selection of visualization tools for different domains. The three basic purposes of data visualisation are exploration, monitoring, and explanation.

Domain:

- AI and ML
- Deep learning
- Data science
- Neural networks
- Big data
- Mobile Computing:
- Robotics
- Computer Vision:
- Computer Graphics and Visualizing

AI and ML:

There are a number of tools that might be useful in helping you analyse and present your findings when it comes to visualising data in the fields of artificial intelligence (AI) and machine learning (ML). Here are a few well-liked visualisation programmes designed expressly for AI and ML:

1. TensorFlow Visualisation Toolkit (TensorBoard): TensorFlow is a well-known open-source machine learning framework that offers TensorBoard, a web-based visualisation tool. It enables you to follow training progress, see data flow graphs, visually check and debug ML models, and examine performance metrics.

2. Kibana: Kibana is an Elastic Stack (Elasticsearch, Logstash, and Kibana) compatible open-source data visualisation platform. It is suitable for monitoring and analysing ML pipelines and system performance since it lets you explore, analyse, and visualise big datasets and log files.

3. Matplotlib: A flexible data visualisation package for Python, matplotlib. It is appropriate for visualising the results of ML models, performance metrics, and data distributions because it offers a large variety of plotting function and customization choices.

4. Seaborn: Based on matplotlib, Seaborn is a Python library. It provides a sophisticated user interface for

designing eye-catching data visualisations. In ML datasets, Seaborn is frequently used to visualise relationships, distributions, and trends.

5. Plotly: Plotly is a robust and interactive data visualisation library that can be used with Python and R and other programming languages. It provides a selection of graphs, charts, and dashboards that are ideal for comparing models, comparing ML results, and exchanging insights.

6. Yellowbrick is a Python package that specialises in visual diagnostic tools for machine learning models. It offers a consistent API for building visualisations for feature analysis, model evaluation, and hyperparameter adjustment. Understanding the performance and behaviour of ML models is made easier with Yellowbrick.

7. ELKI: ELKI is a Java-based data mining system that offers cutting-edge methods and visualisations for clustering, outlier detection, and data preparation. ELKI stands for Environment for Developing KDD-Applications Supported by Index-Structures. In academic and scientific settings, it is frequently utilised.

8. Orange is an open-source machine learning and data visualisation application that provides a visual programming interface for creating ML models and investigating data. It offers a wide variety of interactive visualisations and is appropriate for teaching and quick prototyping.

You may explore, analyse, and effectively communicate AI and ML results with the help of these tools. Your unique needs, preferred programming language, and the degree of customization and interactivity required for your visualisations will all influence the tool you choose.

Deep learning:

1. TensorBoard: TensorBoard is a web-based visualisation tool made available by TensorFlow, as was already described. A variety of visualisation options are provided for inspecting and debugging deep learning models. You can investigate embeddings and activations, keep track of training progress, examine metrics, and visualise the computational graph.

2. TensorFlow-Keras Visualisation Toolkit: A visualisation toolset is offered by TensorFlow-Keras, a high-level deep learning library, and it interfaces with TensorBoard. It enables you to see gradients, layer activations, model designs, and more. It aids in comprehending the activities and data flow within the model.

3. PyTorch Visualisation Toolkit (TensorBoardX): TensorBoardX is a tool that makes PyTorch, a well-liked deep learning system, visualisable. Similar features to TensorBoard are offered by this software, which enables you to view models, scalars, histograms, pictures, and embeddings while training and evaluation.

4. Netron: Netron is a stand-alone visualisation programme that works with deep learning models from a number of frameworks, including TensorFlow, PyTorch, ONNX, and Keras. It enables you to explore the model graphically, investigate specific layers, view input-output shapes, and load and visualise the model architecture.

5. Lucid: A Python package created exclusively for visualising and comprehending deep neural networks is called Lucid. It offers a set of tools and abstractions to examine the internal representations of neural networks and to visualise various properties, neurons, and network layers.

6. Caffe2 NetDrawer: Caffe2 is a deep learning framework, and NetDrawer is a component of it. It allows you to see Caffe2 models, look at layer specifics, see input-output shapes, and see how the network behaves while being trained.

7. NVIDIA TensorRT: NVIDIA TensorRT is a runtime library for deep learning models that supports optimisation and inference. To visualise and analyse the performance of your deep learning models, including layer-wise performance breakdowns, memory usage, and hardware utilisation, it offers profiling and debugging tools.

Data Science:

Several potent tools are available to assist you analyse, investigate, and successfully explain your findings when it comes to visualising data in the subject of data science.

1. Tableau is a popular application for data visualisation that features a drag-and-drop user interface and a variety of visualisation possibilities. It enables you to make interactive charts, maps, dashboards, and more. Both novice and experienced data scientists can utilise Tableau because of its intuitive user interface.

2. Power BI: Power BI is a Microsoft business intelligence application that offers customised dashboards, interactive visualisations, and data

exploration features. It is frequently used for data analysis and reporting in projects involving data science since it integrates effectively with other Microsoft goods and services.

3. Python includes a number of potent packages for data visualisation, including Matplotlib, Seaborn, and Plotly. A popular library for producing static, animated, and interactive visualisations is Matplotlib. While Plotly offers interactive, web-based visualisations, Seaborn offers high-level statistical visualisations. These libraries are widely used in the data science community and are quite customisable.

4. R Programming and Visualization tools (ggplot2, lattice, shiny): R is a well-liked programming language for data analysis and comes with a number of visualisation tools. The Grammar of Graphics is a set of rules that ggplot2 adheres to, and it is renowned for its beautiful and adaptable visualisations. Shiny makes it possible to create interactive web apps using data visualisations, and Lattice is another R programme for making multivariate charts.

5. D3.js: D3.js (Data-Driven Documents) is a JavaScript package used to build interactive, personalised data visualisations for the web. It offers strong tools for working with and connecting data to visual components. Although D3.js is very flexible, using it to its full potential necessitates programming knowledge.

6. Jupyter Notebooks: For data analysis and visualisation, Jupyter Notebooks are widely used in the data science community. Jupyter Notebooks give you the ability to build dynamic and interactive data visualisations right inside the notebook environment thanks to the mix of Python (or R) programming, markdown, and visualisations.

7. Apache Superset: An open-source platform for data exploration and visualisation, Apache Superset. It provides a wide range of interactive tools, dashboards, and visualisation possibilities. Multiple data sources are supported by Apache Superset, which also offers a user-friendly interface for creating and sharing visualizing.

8. Google Data Studio: You may build interactive dashboards and reports with Google Data Studio, a web-based reporting and visualisation tool. It works nicely with other Google products and is frequently used for data visualisation and marketing analytics in the cloud. The type and complexity of the data, the desired level of interaction, preferred programming languages, and the particular needs of your data science project all play a role in the visualisation tool you choose.

Networks of Neurons:

1. TensorBoard: TensorBoard is a web-based visualisation tool offered by TensorFlow that offers a variety of capabilities to visualise neural networks. It enables you to study embeddings and activations, observe training progress, examine performance indicators, and visualise computational graphs.

2. Netron: Netron is a stand-alone programme that enables the visualisation of neural network models created using a variety of frameworks, including TensorFlow, PyTorch, ONNX, and Keras. It offers a user-friendly interactive interface that enables one to investigate individual layers, load and view the model architecture, view input-output forms, and graphically explore the network.

3. TensorBoardX: A package that supports visualisation in PyTorch, is part of the PyTorch Visualisation Toolkit. You can visualise model architectures, layer activations, gradients, and more thanks to its integration with TensorBoard. TensorBoardX aids in comprehending the processes and data flow within the model.

4. Keras Visualisation Toolkit (TensorFlow-Keras): TensorFlow-Keras is a high-level deep learning framework that offers an integration with TensorBoard for a visualisation toolkit. It enables you to see gradients, layer activations, model designs, and more. It aids in comprehending the flow of data and operations within the model.

5. Lucid: A Python package created exclusively for visualising and comprehending deep neural networks is called Lucid. It offers a set of tools and abstractions to investigate neural networks' internal representations, visualise various properties, neurons, and layers, and gain understanding of the behaviour of the model.

6. NVIDIA TensorRT: NVIDIA TensorRT is a runtime library for deep learning models that supports optimisation and inference. It offers tools for troubleshooting and monitoring neural network performance, including layer-by-layer performance breakdowns, memory usage, and hardware utilisation.

These tools can help you comprehend neural network architectures, visualise and analyse the inner workings of neural networks, and obtain insights into learnt representations. The tool you select will rely on the deep learning framework you're using, your particular

requirements, and the level of detail you need in visualizing your neural networks.

Big Data:

1. Apache Superset is an open-source framework for data exploration and visualisation. It has an intuitive user interface and supports a variety of data sources, including big data tools like Apache Hadoop, Apache Spark, and Apache Hive. You may build interactive dashboards and reports using Apache Superset to analyse and visualise massive data.

2. Tableau: Tableau, a popular application for data visualisation, has capabilities made especially for big data analytics. It offers connections to a number of big data platforms, including Amazon Redshift, Apache Spark, and Apache Hadoop. The robust in-memory engine of Tableau makes it possible to handle and visualise huge datasets effectively.

3. D3.js: A JavaScript package that offers strong data visualisation capabilities is called D3.js (Data-Driven Documents). Large datasets may be handled, and it provides flexibility and customization possibilities. In huge data visualisation projects that call for incredibly interactive and unique visualisations, D3.js is frequently employed.

4. Plotly: Available in a variety of computer languages, Plotly is a flexible and interactive data visualisation library. Through features like web-based plots, streaming updates, and cloud-based data storage choices, it supports large data visualisation. Due to its features, Plotly may be used to explore and visualise enormous datasets.

5. Apache Zeppelin: An open-source web-based notebook tool that supports large data analytics and visualisation, Apache Zeppelin is free to use. It allows for interface with Apache Spark and other big data processing frameworks, enabling collaborative data analysis and visualisation tasks.

6. Elastic Stack (Kibana): Kibana is a popular big data analytics and visualisation tool that is part of the Elastic Stack, which also includes Elasticsearch and Logstash. You may examine and visualise enormous amounts of data saved in Elasticsearch thanks to Kibana, the visualisation component of the stack. It provides a range of dashboards, real-time monitoring tools, and visualisation choices.

7. Grafana: Supporting big data analytics, Grafana is an open-source visualisation and monitoring tool.

Numerous data sources, including databases and big data frameworks like Apache Hadoop and Apache Spark, are integrated. Grafana enables you to build interactive dashboards and visualisations for real-time monitoring and analysis of huge data.

These tools offer the ability to effectively handle and visualise massive data. The tool you choose will rely on a number of variables, including the big data technology you are employing specifically, the size of your data, the level of customization and interaction needed, and your preferred programming language or software environment.

Mobile Computing:

1. Sketch: A popular design tool for making user interfaces, particularly those for mobile apps, is Sketch. It provides a selection of features and plugins made especially for mobile design, including artboards, symbols, and prototyping tools.

2. Adobe XD: Adobe XD is a potent prototype and design tool that gives designers the ability to make responsive and dynamic mobile app interfaces. It offers features including component libraries, artboards, responsive scaling, and built-in prototyping possibilities.

3. Framer: Framer is a design and prototyping tool that enables designers to produce dynamic, interactive mobile app user interfaces. It offers an effective environment based on code for developing unique interactions and dynamic prototypes.

4. InVision: A platform for prototyping and collaboration, InVision enables designers to make interactive mobile app prototypes. It enables user testing, clickable prototype creation, design sharing, and feedback collection.

5. Marvel: Marvel is a web-based prototyping and design tool that provides a straightforward and user-friendly interface for developing mobile app prototypes. It enables screen connecting, the creation of interactive hotspots, and the exchange of prototypes for user testing and feedback.

6. Origami Studio: Designed primarily for the interfaces of mobile apps, Facebook's Origami Studio is a potent prototyping tool. It offers designers a visual interface and patch-based method for making dynamic and interactive prototypes.

7. Axure RP: Supporting the design and visualisation of mobile app interfaces, Axure RP is a comprehensive

prototyping and wireframing tool. It has tools for producing documentation, doing user tests, and building interactive prototypes.

8. Proto.io: Using this web-based prototyping tool, designers can easily develop interactive mobile app prototypes without having to know how to code. It offers a variety of integrated user interface elements, animations, and user testing tools.

With the use of these tools, you can visualise and simulate the user interfaces of mobile apps, which will enable you to develop interactive designs, test user interactions, and gather feedback. Your preferences for design, your requirements for collaboration, your needs for prototyping, and the particular features and functionalities you require will all influence the tool you choose.

Robotics:

There are several effective tools available for visualising and modelling robotics systems. These technologies make it possible to simulate robot behaviour, analyse robot performance, and visualise robot models. Here are a few well-liked robotics visualisation tools:

1. ROS (Robot Operating System): ROS is a versatile framework that is frequently used in the study and development of robotics. For the construction of robotic systems, it offers a selection of libraries, tools, and visualisation capabilities. You can visualise robot models, sensor data, and robot behaviour using RViz, a built-in ROS visualisation tool.

2. Gazebo: A popular open-source robot simulation programme, Gazebo. You can model robots, simulate how they interact with the environment, and see how they behave in a 3D simulation environment that is provided. Achievable physics simulation, sensor simulation, and integration with ROS.

3. MATLAB Robotics System Toolbox: This software package offers a variety of modelling, simulation, and visualisation capabilities for robotic systems. It features an interactive robot control system, sensor simulation, and a 3D visualisation environment for robot models.

4. Webots is a well-known open-source robot simulation programme. It provides a 3D environment where you can test robot control methods, simulate robot models, and see robot behaviour. Webots offers a wealth of tools for robotics simulation and supports a number of different programming languages.

5. Coppeliasim (formerly V-REP): Coppeliasim is a flexible framework for robotics simulation that enables the development and visualisation of intricate robot models. You may mimic robot behaviour, test control systems, and do virtual experiments in its 3D environment. Numerous programming languages are supported by Coppeliasim, which also offers a wide range of simulation features.

6. Unity3D: A well-liked game creation tool, Unity3D can be used to visualise robots. You may develop accurate robot simulations and see robot behaviour using its robust 3D rendering capabilities, physics simulation, and scripting support.

Researchers, engineers, and developers can analyse and test their robot systems using these tools' visualisation and simulation capabilities for robotics applications. The tool you choose will rely on a variety of elements, including the particular needs of your robotics project, the degree of realism and physics simulation required, and the tool's integration possibilities with other programmes or frameworks you are using.

Computer Vision:

1. OpenCV: OpenCV is a well-known open-source computer vision toolkit that offers a variety of functions for processing images and videos. It has tools for showing pictures, drawing boundaries around objects, highlighting elements in pictures, and more. To create unique visualisations, OpenCV can be coupled with different tools and frameworks.

2. Matplotlib: Matplotlib is a well-liked Python data visualisation library that may be used to display the outcomes of computer vision. It offers tools for showing pictures, drawing graphs, making histograms, and other things. Along with other computer vision libraries, Matplotlib is frequently used and provides a wide range of customizability options.

3. TensorBoard: TensorFlow, a well-known deep learning system, offers TensorBoard as a visualisation tool. It enables you to view different aspects of your computer vision models, including model architecture, performance metrics, and training progress. TensorBoard offers dynamic dashboards for evaluating and contrasting various experiments.

4. PyTorch Lightning: PyTorch Lightning is a thin wrapper for PyTorch that makes deep learning model training and visualisation easier. It offers connection with a variety of visualisation tools, such as TensorBoard,

enabling you to track and visualise the development and testing of computer vision models.

5. D3.js: D3.js (Data-Driven Documents) is an advanced JavaScript toolkit that enables the development of interactive data visualisations for web browsers. Although it is essentially a general-purpose visualisation library, it may be used to visualise computer vision outcomes and produce unique visualisations for jobs like object recognition, picture segmentation, and feature visualisation.

6. NVIDIA DALI: The GPU-accelerated NVIDIA DALI (Data Loading package) package was created for effective data pretreatment and augmentation in deep learning applications, including computer vision. DALI provides visualisation features for inspecting augmentations, viewing preprocessed data, and validating data pipeline output.

7. Caffe2 NetRunner: Caffe2 NetRunner is a tool for visualising and debugging deep learning models trained using the Caffe2 deep learning framework. It visualises model layers, input-output linkages, and intermediate activations, enabling improved understanding and study of computer vision models.

Computer Graphics and Visualizing:

1. Blender: Blender is an open-source 3D creation package with modelling, animation, rendering, and compositing capabilities. It is commonly used to produce high-quality 3D visuals, animations, and visual effects.

2. Unity3D: Unity3D is a popular game creation engine that also has applications in computer graphics and visualisation. It has a comprehensive collection of tools and capabilities for developing interactive 3D applications, simulations, and virtual reality experiences.

3. D3.js (Data-Driven Documents): D3.js (Data-Driven Documents) is a robust JavaScript toolkit for producing interactive data visualisations. It allows you to use HTML, SVG, and CSS to create a variety of visualisations, including charts, graphs, maps, and complicated data-driven visualisations.

4. Tableau: Tableau is a popular data visualisation application with an easy-to-use interface for producing and sharing interactive visualisations. It facilitates data exploration and analysis and provides a wide range of visualisation choices such as charts, maps, and dashboards.

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