**Project name: SentiScribe: Multimodal Fusion for Sentiment Analysis**

**Project author(s): Jin Gao, Selena Zhang**

|  |  |
| --- | --- |
| Package/Tool/Library | Visual Studio Code 1.89.1 |
| Machine and OS Version | Windows 10  Windows 11  Mac OS 14.1 |
| Availability | https://code.visualstudio.com/ |
| Usage | Code Editing  Terminal  Run Ipynb notebooks |
| Data Type of Input | N/A |
| How well did it work in terms of   * accuracy, as in rough percentage correct, in your experience * speed: | N/A  Fast |
| Did it work out of the box? If not, what did you have to do to use it? | √ |

|  |  |
| --- | --- |
| Package/Tool/Library | Python 3.12.0 |
| Machine and OS Version | Windows 10  Windows 11  Mac OS 14.1 |
| Availability | https://www.python.org/downloads/release/python-3120/ |
| Usage | Code running environment |
| Data type of the input | N/A |
| How well did it work in terms of | N/A |
| Did it work out of the box? If not, what did you have to do to use it? | √ |

|  |  |
| --- | --- |
| Package/Tool/Library | Hume 0.5.0 |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Audio processing and machine learning tasks |
| Data Type of Input | Audio files, possibly text for configuration |
| Accuracy | Accuracy: Varies depending on the task; generally effective for basic tasks. Speed: Generally fast enough for real-time applications |
| Speed |  |
| Out of the Box | Requires installation; may need additional configuration depending on use case |

|  |  |
| --- | --- |
| Package/Tool/Library | Hume[stream] 0.5.0 |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Enhanced audio processing with streaming capabilities |
| Data Type of Input | Audio streams |
| Accuracy | Varies, generally reliable for supported tasks |
| Speed | Optimized for streaming, fast processing |
| Out of the Box | Requires initial setup and configuration for streaming |

|  |  |
| --- | --- |
| Package/Tool/Library | OpenAI Latest Version |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Access to OpenAI's API for AI models |
| Data Type of Input | Text for AI processing |
| Accuracy | High for tasks within model capabilities |
| Speed | Fast, network dependent |
| Out of the Box | Requires API key setup and configuration |

|  |  |
| --- | --- |
| Package/Tool/Library | Python-dotenv Latest Version |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Management of environment variables in Python |
| Data Type of Input | .env file containing environment variables |
| Accuracy | N/A |
| Speed | Immediate, operates at file I/O speed |
| Out of the Box | Simple to install and use |

|  |  |
| --- | --- |
| Package/Tool/Library | Pydub 0.25.1 |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Audio manipulation and processing |
| Data Type of Input | Audio files |
| Accuracy | Good for supported audio processing tasks |
| Speed | Fast for file-based operations |
| Out of the Box | Requires ffmpeg for full functionality |

|  |  |
| --- | --- |
| Package/Tool/Library | FFmpeg Latest Version |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via direct download from FFmpeg website |
| Usage | Media file conversion and processing |
| Data Type of Input | Audio and video files |
| Accuracy | Very high for media processing |
| Speed | Fast, dependent on media complexity |
| Out of the Box | Requires installation and potential configuration |

|  |  |
| --- | --- |
| Package/Tool/Library | Moviepy Latest Version |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Video editing and processing |
| Data Type of Input | Video files |
| Accuracy | High for video editing tasks |
| Speed | Depends on video complexity and length |
| Out of the Box | Requires ffmpeg for full functionality |

|  |  |
| --- | --- |
| Package/Tool/Library | WebVTT-py 0.4.6 |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Handling and parsing WebVTT files |
| Data Type of Input | .vtt files |
| Accuracy | Effective for standard VTT file handling |
| Speed | Fast, operates on text file processing |
| Out of the Box | Ready to use after installation |

|  |  |
| --- | --- |
| Package/Tool/Library | OpenCV-python 4.9.0.80 |
| Machine and OS Version | Windows 10, Windows 11, Mac OS 14.1 |
| Availability | Via Python Package Index (PyPI) |
| Usage | Image and video analysis and manipulation |
| Data Type of Input | Images and video streams |
| Accuracy | High for image and video processing tasks |
| Speed | Generally fast, dependent on processing complexity |
| Out of the Box | Basic functions work out of the box; additional functionality may require further setup |

|  |  |
| --- | --- |
| Package/Tool/Library | pandas (latest version recommended) |
| Machine and OS Version | Compatible with Windows, MacOS, Linux |
| Availability | Via Python Package Index (PyPI) |
| Usage | Data manipulation and analysis |
| Data Type of Input | CSV, Excel, SQL databases, and many others |
| Accuracy | N/A (Depends on usage context) |
| Speed | High for data manipulation tasks |
| Out of the Box | Ready to use after installation |

|  |  |
| --- | --- |
| Package/Tool/Library | numpy (latest version recommended) |
| Machine and OS Version | Compatible with Windows, MacOS, Linux |
| Availability | Via Python Package Index (PyPI) |
| Usage | Numerical computing |
| Data Type of Input | Arrays and matrices |
| Accuracy | N/A (Depends on usage context) |
| Speed | Optimized for numerical operations |
| Out of the Box | Ready to use after installation |

|  |  |
| --- | --- |
| Package/Tool/Library | matplotlib (latest version recommended) |
| Machine and OS Version | Compatible with Windows, MacOS, Linux |
| Availability | Via Python Package Index (PyPI) |
| Usage | Plotting and visualization of data |
| Data Type of Input | Data from arrays, lists, or pandas DataFrames |
| Accuracy | N/A (Depends on usage context) |
| Speed | Good for plotting, can be slow with very large datasets |
| Out of the Box | Ready to use after installation, but may require additional setup for advanced features |

|  |  |
| --- | --- |
| Package/Tool/Library | ast (part of the Python Standard Library) |
| Machine and OS Version | Compatible with Windows, MacOS, Linux |
| Availability | Standard with Python installation |
| Usage | Manipulate Python source code as tree of the abstract syntax grammar |
| Data Type of Input | Python code |
| Accuracy | N/A (Depends on usage context) |
| Speed | Immediate, as it operates at the code parsing level |
| Out of the Box | Integrated in Python; no installation required |

|  |  |
| --- | --- |
| Package/Tool/Library | scikit-learn (latest version recommended) |
| Machine and OS Version | Compatible with Windows, MacOS, Linux |
| Availability | Via Python Package Index (PyPI) |
| Usage | Machine learning algorithms and tools |
| Data Type of Input | Numeric or categorical data, often in arrays or matrices |
| Accuracy | High for machine learning tasks, dependent on proper model tuning |
| Speed | Generally fast, depends on algorithm and data size |
| Out of the Box | Ready to use after installation, but requires understanding of ML concepts |

|  |  |
| --- | --- |
| Package/Tool/Library | Axios (latest version recommended) |
| Machine and OS Version | Compatible with browsers and Node.js |
| Availability | Via jsDelivr CDN or npm |
| Usage | Making HTTP requests from browser and Node.js |
| Data Type of Input | HTTP request configurations (URL, headers, params, etc.) |
| Accuracy | N/A (Depends on API responses) |
| Speed | Fast, dependent on network conditions and server response |
| Out of the Box | Easy to use after including via CDN or npm install |

|  |  |
| --- | --- |
| Package/Tool/Library | Bootstrap 5.3.3 |
| Machine and OS Version | Compatible with all major browsers |
| Availability | Via jsDelivr CDN or npm |
| Usage | Front-end framework for building responsive, mobile-first sites |
| Data Type of Input | HTML, CSS, and JavaScript for UI components |
| Accuracy | N/A (Depends on proper HTML and CSS usage) |
| Speed | CSS and JavaScript load fast, enhancing user experience |
| Out of the Box | Ready to use with minimal setup; link to CSS, optionally include JS components |