**HistoQC**

* Automated QC tool identifying staining outliers and artifacts in slides.
* Artifacts: artifacts in slides are unwanted visual elements or distortions that appear during the preparation, scanning, or storage of pathology slides.(include dust, air bubbles, folds, pen mark, staining error)
* Fork – 108, star- 290
* Features: Detect out of focus regions, pen marks, artifacts, staining inconsistencies.
* Tech: Python (version 3.7 and 3.8)- OpenSlide, OpenCV.
* OpenSlide is a C library with Python bindings that allows your project to read, process, and extract data from whole-slide images (WSIs) — which are typically very large digital pathology image files like .svs, .tiff, etc.
* **OpenCV (Open Source Computer Vision Library)** is a powerful open-source library used for **image and video processing**. In a machine learning or image analysis project
* Latest activity 2023
* Clinical cancer informatics 2019
* Using ubuntu 22.04.5 LTS (WSL install inside windows)
* Ubuntu WSL (Windows Subsystem for Linux) allows you to run a Linux environment directly on Windows without a virtual machine. It enables access to Linux tools like Bash, apt, and Python, making it ideal for development, scripting, and running Linux-based software. WSL is lightweight, integrates smoothly with Windows, and is especially useful for data science and machine learning workflows.
* Clone the project(git clone http…):- Making a copy of project
* Cd HistoQC :- change directory in to the HistoQC folder.
* Ia – show all files including hidden file
* python3 -m venv env :- Create virtual environment
* source env/bin/activate :-Sets environment variables so Python and pip point to your virtual environment.
* python -m pip install --upgrade pip:- is used to **upgrade the pip tool** to the latest version within your current Python environment.
* pip install -r requirements.txt :- is used to **install all the dependencies** listed in a requirements.txt file into your Python environment.  
  **-r requirements.txt**: The -r flag means "install from the requirements file". It points pip to a text file (requirements.txt) that lists all the Python packages and their specific versions required for the project.
* python -m histoqc --help use of this code :- Users can view detailed information about how to use histoqc module from the command line.
* python -m histoqc -c v2.1 -n 3 "\*.svs" :- This command runs HistoQC with the v2.1 configuration file, uses 3 parallel workers, and processes all .svs files in the folder.