Wastewater Metagenomics Pipeline

*_R1.fastq *_R2.fastq

Evaluation
- FastQC
- MultiQC

Adapter/quality trimming
- Fastp
- Trimmomatic

PhiX Removal
- Bowtie2

Host Read Removal
- Hostile
- BBmap

Taxonomic Classification
- Kraken2

Merging Reports
- KrakenTools

Visualization
- Krona
- Pavian
- R

De novo Assembly
- metaSPades
- megahit
- Idba-ud

Assembly Evaluation
- Quast

Virus Discovery
- geNomad

Viral Contigs Refinement
- cobra-meta

Evaluation
- CheckV

Resistome Analysis
- Comprehensive Antibiotic Resistance Database (CARD)
- Antibiotic Resistance Genes Database (ARDB)
- Structured Antibiotic Resistance Genes (SARGs)
- ResFinder
- ARG-ANNOT
- MEGARes

Binning
- MaxBin2
- MetaBAT2

Bin Refinement
- DASTool
- MetaWrap

Evaluation
- CheckM

Taxonomic Assignment of Bins
- GTDB-TK

Report files (csv)

Summary files (tsv)

Data integration (clinical, environmental, population)

Data analytics (machine learning/artificial intelligence)

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