

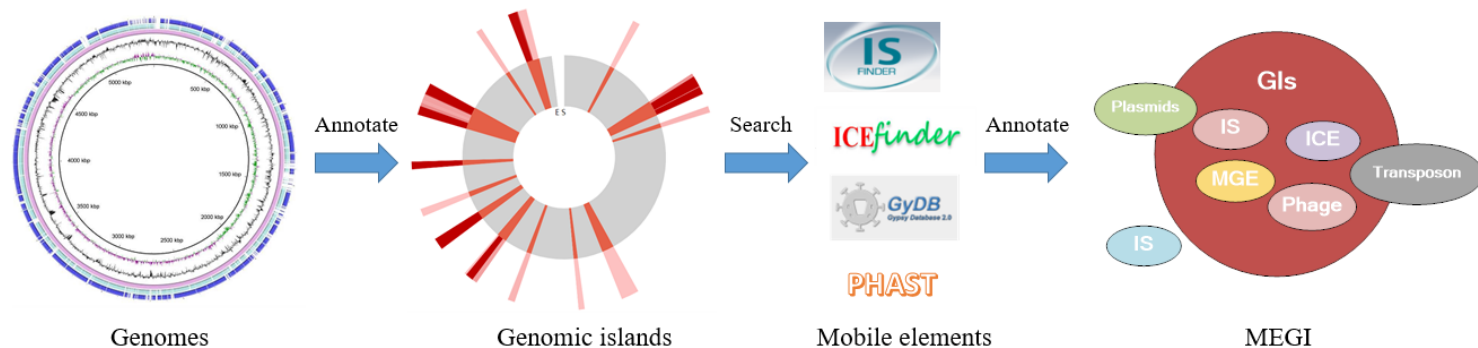
MEGI: a comprehensive annotation dataset of mobile elements for genomic island detection

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Problems & Ideas

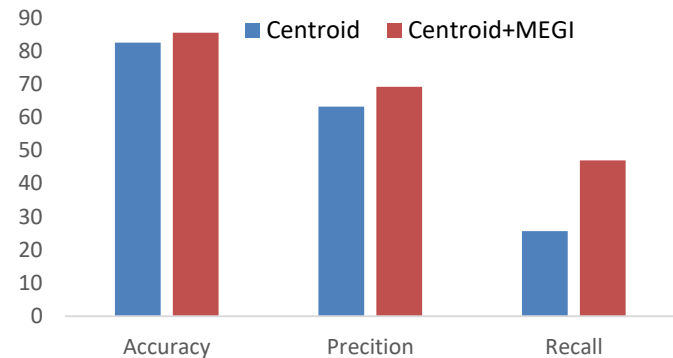
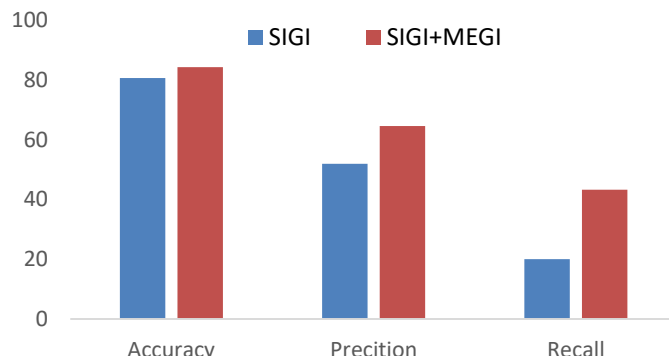
- Problems of mobile elements for genomic island detection:
 - mobile elements is relatively limited in genome island detection.
 - Existing mobile element databases focus on specific types of mobile elements
- Ideas: A comprehensive dataset (MEGI) of the mobile elements is proposed for genomic island detection, including the insertion sequences, integrative and conjugative elements, transposons and bacteriophages.



Collection pipeline of the comprehensive mobile element dataset (MEGI)

Main Contributions

- Contributions:
 - A comprehensive dataset (MEGI) of the mobile elements was proposed for genomic island detection including the insertion sequences, integrative and conjugative elements, transposons and bacteriophages ;
 - MEGI can help the Centroid and SIGI-HMM methods achieve a recall increase of over 20%, along with enhanced accuracy rates;



With the help of the proposed MEGI datasets, the recall of the Centroid and SIGI-HMM methods increased by more than 20%, and the accuracy rate was increased by 3% and 4% respectively. Left: the performance of the SIGI method; Right: the performance of the Centroid method.