**Supplementary Table 1.** The ARI and NMI of each module

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (w/o)WFA | (w/o)CL | (w/o)Radius | (w/o)KNN | SpaMWGDA |
| ARI | 0.6 | 0.61 | 0.54 | 0.57 | 0.73 |
| 0.54 | 0.45 | 0.37 | 0.38 | 0.66 |
| 0.52 | 0.5 | 0.5 | 0.5 | 0.67 |
| 0.51 | 0.49 | 0.47 | 0.48 | 0.53 |
| 0.75 | 0.62 | 0.7 | 0.78 | 0.55 |
| 0.6 | 0.52 | 0.6 | 0.65 | 0.52 |
| 0.47 | 0.47 | 0.62 | 0.47 | 0.62 |
| 0.52 | 0.5 | 0.51 | 0.51 | 0.84 |
| 0.45 | 0.38 | 0.5 | 0.5 | 0.6 |
| 0.39 | 0.39 | 0.37 | 0.37 | 0.57 |
| 0.48 | 0.48 | 0.55 | 0.5 | 0.61 |
| 0.4 | 0.42 | 0.48 | 0.38 | 0.57 |
| AVG. | 0.52 | 0.49 | 0.52 | 0.51 | 0.62 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (w/o)WFA | (w/o)CL | (w/o)Radius | (w/o)KNN | SpaMWGDA |
| NMI | 0.63 | 0.6 | 0.6 | 0.6 | 0.78 |
| 0.59 | 0.55 | 0.43 | 0.49 | 0.72 |
| 0.62 | 0.64 | 0.62 | 0.62 | 0.69 |
| 0.4 | 0.45 | 0.63 | 0.64 | 0.66 |
| 0.63 | 0.58 | 0.55 | 0.6 | 0.55 |
| 0.54 | 0.4 | 0.52 | 0.48 | 0.6 |
| 0.53 | 0.59 | 0.57 | 0.6 | 0.73 |
| 0.6 | 0.61 | 0.63 | 0.63 | 0.81 |
| 0.58 | 0.53 | 0.6 | 0.6 | 0.68 |
| 0.4 | 0.43 | 0.49 | 0.4 | 0.64 |
| 0.59 | 0.57 | 0.6 | 0.55 | 0.68 |
| 0.53 | 0.54 | 0.6 | 0.45 | 0.67 |
| AVG. | 0.55 | 0.54 | 0.57 | 0.56 | 0.68 |