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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dataset | Model | Acc.\* | Kp.\* | AUC | P\* (Nv.)\* | R\* (Nv.)\* | F1 (Nv.) | P (Int.)\* | R (Int.) | F1 (Int.) | P (Exp.)\* | R (Exp.) | F1 (Exp.) |
| C# | LR\* | 0.81 | 0.66 | 0.91 | 0.88 | 0.92 | 0.9 | 0.71 | 0.86 | 0.78 | 1.0 | 0.23 | 0.38 |
| C# | RF\* | 0.86 | 0.76 | 0.86 | 0.92 | 0.92 | 0.92 | 0.85 | 0.78 | 0.82 | 0.64 | 0.65 | 0.85 |
| C# | GB\* | 0.86 | 0.76 | 0.86 | 0.94 | 0.92 | 0.93 | 0.83 | 0.81 | 0.82 | 0.85 | 0.62 | 0.85 |
| C# | SVM | 0.86 | 0.73 | 0.89 | 0.92 | 0.92 | 0.91 | 0.88 | 0.84 | 0.82 | 0.62 | 0.65 | 0.85 |
| Go | LR | 0.81 | 0.65 | 0.85 | 0.86 | 0.87 | 0.85 | 0.79 | 0.84 | 0.8 | 0.67 | 0.06 | 0.11 |
| Go | RF | 0.82 | 0.69 | 0.89 | 0.93 | 0.88 | 0.91 | 0.9 | 0.83 | 0.86 | 0.63 | 0.44 | 0.31 |
| Go | GB | 0.8 | 0.66 | 0.86 | 0.95 | 0.88 | 0.91 | 0.83 | 0.85 | 0.84 | 0.67 | 0.34 | 0.44 |
| Go | SVM | 0.83 | 0.7 | 0.9 | 0.91 | 0.84 | 0.84 | 0.81 | 0.84 | 0.82 | 0.64 | 0.28 | 0.32 |
| Java | LR | 0.8 | 0.65 | 0.88 | 0.9 | 0.9 | 0.87 | 0.75 | 0.76 | 0.75 | 0.75 | 0.19 | 0.15 |
| Java | RF | 0.81 | 0.69 | 0.95 | 0.98 | 0.95 | 0.95 | 0.95 | 0.93 | 0.94 | 0.85 | 0.38 | 0.23 |
| Java | GB | 0.81 | 0.66 | 0.93 | 0.96 | 0.94 | 0.94 | 0.92 | 0.88 | 0.9 | 0.83 | 0.23 | 0.23 |
| Java | SVM | 0.8 | 0.64 | 0.89 | 0.94 | 0.9 | 0.89 | 0.88 | 0.84 | 0.82 | 0.79 | 0.39 | 0.23 |
| NodeJs | LR | 0.69 | 0.47 | 0.64 | 0.77 | 0.77 | 0.77 | 0.56 | 0.61 | 0.58 | 0.48 | 0.11 | 0.17 |
| NodeJs | RF | 0.71 | 0.52 | 0.72 | 0.86 | 0.82 | 0.83 | 0.68 | 0.68 | 0.68 | 0.52 | 0.27 | 0.27 |
| NodeJs | GB | 0.72 | 0.58 | 0.75 | 0.87 | 0.83 | 0.84 | 0.74 | 0.68 | 0.7 | 0.64 | 0.34 | 0.41 |
| NodeJs | SVM | 0.71 | 0.52 | 0.68 | 0.86 | 0.81 | 0.81 | 0.67 | 0.68 | 0.68 | 0.47 | 0.27 | 0.22 |
| Python | LR | 0.74 | 0.54 | 0.77 | 0.88 | 0.73 | 0.79 | 0.68 | 0.72 | 0.69 | 0.54 | 0.29 | 0.29 |
| Python | RF | 0.77 | 0.58 | 0.89 | 0.91 | 0.92 | 0.92 | 0.9 | 0.95 | 0.93 | 0.83 | 0.75 | 0.54 |
| Python | GB | 0.77 | 0.58 | 0.89 | 0.91 | 0.92 | 0.92 | 0.9 | 0.95 | 0.93 | 0.83 | 0.75 | 0.54 |
| Python | SVM | 0.74 | 0.54 | 0.75 | 0.88 | 0.72 | 0.74 | 0.68 | 0.72 | 0.69 | 0.6 | 0.29 | 0.29 |
| Ruby | LR | 0.72 | 0.51 | 0.77 | 0.9 | 0.83 | 0.86 | 0.61 | 0.67 | 0.61 | 0.75 | 0.4 | 0.35 |
| Ruby | RF | 0.79 | 0.62 | 0.89 | 0.94 | 0.92 | 0.93 | 0.88 | 0.78 | 0.82 | 0.88 | 0.73 | 0.62 |
| Ruby | GB | 0.79 | 0.62 | 0.89 | 0.94 | 0.92 | 0.93 | 0.88 | 0.78 | 0.82 | 0.88 | 0.73 | 0.62 |
| Ruby | SVM | 0.8 | 0.64 | 0.85 | 0.95 | 0.92 | 0.92 | 0.88 | 0.81 | 0.81 | 0.85 | 0.32 | 0.32 |
| Socket.io | RF | 0.22 | 0.2 | 0.47 | 0.33 | 0.43 | 0.38 | 0.2 | 0.14 | 0.17 | 0.0 | 0.0 | 0.0 |
| Socket.io | SVM | 0.33 | 0.21 | 0.51 | 0.57 | 0.57 | 0.57 | 0.2 | 0.14 | 0.17 | 0.17 | 0.2 | 0.2 |
| React | RF | 0.55 | 0.24 | 0.66 | 0.64 | 0.72 | 0.68 | 0.11 | 0.05 | 0.06 | 0.57 | 0.67 | 0.61 |
| React | SVM | 0.52 | 0.16 | 0.73 | 0.55 | 0.55 | 0.55 | 0.0 | 0.0 | 0.0 | 0.54 | 0.73 | 0.62 |
| MongoDB | RF | 0.57 | 0.36 | 0.71 | 0.5 | 0.75 | 0.6 | 0.67 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 |
| MongoDB | SVM | 0.5 | 0.22 | 0.63 | 0.8 | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 | 0.56 | 1.0 | 0.71 |

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| Dataset | Model | Acc.\* | Kp.\* | AUC | P\* (Nv.)\* | R\* (Nv.)\* | F1 (Nv.) | P (Int.)\* | R (Int.) | F1 (Int.) | P (Exp.)\* | R (Exp.) | F1 (Exp.) |
| Socket.io | RF | 0.22 | 0.2 | 0.47 | 0.33 | 0.43 | 0.38 | 0.2 | 0.14 | 0.17 | 0.0 | 0.0 | 0.0 |
| Socket.io | SVM | 0.33 | 0.21 | 0.51 | 0.57 | 0.57 | 0.57 | 0.2 | 0.14 | 0.17 | 0.17 | 0.2 | 0.2 |
| React | RF | 0.55 | 0.24 | 0.66 | 0.64 | 0.72 | 0.68 | 0.11 | 0.05 | 0.06 | 0.57 | 0.67 | 0.61 |
| React | SVM | 0.52 | 0.16 | 0.73 | 0.55 | 0.55 | 0.55 | 0.0 | 0.0 | 0.0 | 0.54 | 0.73 | 0.62 |
| MongoDB | RF | 0.57 | 0.36 | 0.71 | 0.5 | 0.75 | 0.6 | 0.67 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 |
| MongoDB | SVM | 0.5 | 0.22 | 0.63 | 0.8 | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 | 0.56 | 1.0 | 0.71 |

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| Dataset | Model | Acc.\* | Kp.\* | AUC | P\* (Nv.)\* | R\* (Nv.)\* | F1 (Nv.) | P (Int.)\* | R (Int.) | F1 (Int.) | P (Exp.)\* | R (Exp.) | F1 (Exp.) |
| C# | GB | 0.85 | 0.74 | 0.96 | 0.86 | 0.92 | 0.92 | 0.82 | 0.76 | 0.79 | 0.85 | 0.85 | 0.85 |
| C# | LR | 0.85 | 0.77 | 0.92 | 0.86 | 0.93 | 0.93 | 0.83 | 0.78 | 0.81 | 0.71 | 0.85 | 0.8 |
| C# | RF | 0.88 | 0.78 | 0.96 | 0.92 | 0.92 | 0.92 | 0.86 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 |
| C# | SVM | 0.87 | 0.8 | 0.9 | 0.91 | 0.92 | 0.91 | 0.84 | 0.84 | 0.85 | 0.71 | 0.85 | 0.8 |
| Go | GB | 0.86 | 0.77 | 0.94 | 0.95 | 0.92 | 0.93 | 0.85 | 0.76 | 0.81 | 0.68 | 0.72 | 0.72 |
| Go | LR | 0.86 | 0.75 | 0.92 | 0.89 | 0.95 | 0.92 | 0.83 | 0.83 | 0.81 | 0.62 | 0.7 | 0.7 |
| Go | RF | 0.89 | 0.78 | 0.96 | 0.9 | 0.95 | 0.93 | 0.86 | 0.84 | 0.84 | 0.71 | 0.68 | 0.69 |
| Go | SVM | 0.9 | 0.82 | 0.92 | 0.94 | 0.92 | 0.92 | 0.87 | 0.92 | 0.89 | 0.79 | 0.92 | 0.85 |
| Java | GB | 0.9 | 0.83 | 0.98 | 0.97 | 0.93 | 0.95 | 0.88 | 0.85 | 0.87 | 0.85 | 0.85 | 0.85 |
| Java | LR | 0.88 | 0.78 | 0.96 | 0.9 | 0.97 | 0.94 | 0.85 | 0.82 | 0.84 | 0.85 | 0.72 | 0.72 |
| Java | RF | 0.92 | 0.84 | 0.97 | 0.96 | 0.93 | 0.95 | 0.9 | 0.84 | 0.87 | 0.85 | 0.92 | 0.85 |
| Java | SVM | 0.88 | 0.87 | 0.93 | 0.94 | 0.9 | 0.92 | 0.88 | 0.88 | 0.82 | 0.79 | 0.92 | 0.89 |
| NodeJs | GB | 0.87 | 0.82 | 0.97 | 0.93 | 0.88 | 0.9 | 0.87 | 0.83 | 0.84 | 0.65 | 0.34 | 0.43 |
| NodeJs | LR | 0.89 | 0.79 | 0.97 | 0.87 | 0.81 | 0.84 | 0.78 | 0.73 | 0.75 | 0.71 | 0.27 | 0.42 |
| NodeJs | RF | 0.9 | 0.82 | 0.97 | 0.95 | 0.85 | 0.9 | 0.83 | 0.77 | 0.8 | 0.79 | 0.54 | 0.71 |
| NodeJs | SVM | 0.92 | 0.87 | 0.97 | 0.94 | 0.9 | 0.91 | 0.88 | 0.88 | 0.87 | 0.85 | 0.92 | 0.9 |
| Python | GB | 0.89 | 0.88 | 0.97 | 0.97 | 0.95 | 0.96 | 0.93 | 0.94 | 0.94 | 0.88 | 0.92 | 0.93 |
| Python | LR | 0.87 | 0.74 | 0.9 | 0.92 | 0.97 | 0.93 | 0.89 | 0.88 | 0.89 | 0.88 | 0.75 | 0.82 |
| Python | RF | 0.92 | 0.88 | 0.97 | 0.97 | 0.97 | 0.96 | 0.93 | 0.94 | 0.94 | 0.98 | 0.98 | 0.92 |
| Python | SVM | 0.92 | 0.88 | 0.97 | 0.97 | 0.92 | 0.92 | 0.92 | 0.88 | 0.89 | 0.98 | 0.94 | 0.92 |
| Ruby | GB | 0.87 | 0.74 | 0.93 | 0.94 | 0.92 | 0.93 | 0.87 | 0.83 | 0.83 | 0.75 | 0.73 | 0.64 |
| Ruby | LR | 0.86 | 0.72 | 0.92 | 0.89 | 0.89 | 0.89 | 0.78 | 0.73 | 0.74 | 0.75 | 0.64 | 0.54 |
| Ruby | RF | 0.88 | 0.78 | 0.93 | 0.91 | 0.92 | 0.91 | 0.85 | 0.83 | 0.84 | 0.83 | 0.73 | 0.73 |
| Ruby | SVM | 0.89 | 0.88 | 0.94 | 0.94 | 0.92 | 0.92 | 0.9 | 0.81 | 0.81 | 0.88 | 0.85 | 0.92 |