

Table S1. Application of AI in GC detection.

| No. | First Author | Data Sources | Sample Size | Verification Mode | Classification Algorithms | C-index or AUC |
|-----|-------------------------|---------------|-------------|-------------------|---------------------------|----------------|
| 1 | Lida, M (2018)[13] | Japan | 5648 | EV | Cox | 0.76 |
| 2 | Zhi, SL (2022)[14] | TCGA | 318 | IV | Cox | 0.798 |
| 3 | Xu, W (2021)[15] | China | 428 | EV | LR | 0.82 |
| 4 | Zhang, XR (2022)[16] | China | 2779 | IV | Cox | 0.82 |
| 5 | Jin, Y (2021)[17] | China | 417 | IV | Cox | 0.753 |
| 6 | Yang, Y (2021)[18] | China | 392 | IV | LR | 0.924 |
| 7 | Duan, FJ (2021)[19] | China | 1088 | IV | LR | 0.773 |
| 8 | Ishikura, N (2021)[20] | Japan | 3678 | EV | LR | 0.78 |
| 9 | Charvat, H (2016)[21] | Japan | 19028 | IV | Cox | 0.768 |
| 10 | Wang, H (2019)[22] | TCGA+GEO | 1087 | EV | Cox | NS |
| 11 | Wang, XY (2022)[23] | GenBank | 1022 | IV | RF | 0.75 |
| 12 | Sun, MY (2020)[24] | TCGA | 919 | IV | Cox | 0.781 |
| 13 | Briggs, E(2022)[25] | Britain | 40348 | IV | SVM+RF+LR+NB+XGB | 0.87 |
| 14 | Cao, MM (2020)[26] | China | 89914 | IV | Cox | NS |
| 15 | Park, B (2021)[27] | South Korea | 1586 | IV | LR | 0.607 |
| 16 | In, H (2018)[28] | United States | 140 | IV | LR | NS |
| 17 | Mahmoodi, SA (2020)[29] | Iran | 560 | IV | FCM+ANN+SV M+DT | NS |
| 18 | Zhang, LW (2020)[30] | China | 640 | EV | DL(CNN) | 0.78 |
| 19 | Kumar, S (2015)[31] | NS | 210 | IV | NS | 0.87 |
| 20 | Yang, JC (2018)[32] | TCGA+GEO | 684 | EV | Cox | 0.809 |
| 21 | Li, TD (2020)[33] | TCGA | 406 | IV | Cox | 0.92 |
| 22 | Xie, SH (2016)[34] | Sweden | 1009 | IV | LR | 0.84 |
| 23 | Hou, C (2022)[35] | China | 2909 | EV | Cox | 0.728 |
| 24 | Zhang, LX (2022)[36] | China | 3647 | IV | Cox | 0.685 |
| 25 | Liu, QF (2021)[37] | China | 10018 | EV | RF | 0.852 |
| 26 | Haga, Y (2018)[38] | Japan | 2045 | IV | Cox | 0.80 |
| 27 | Gao, L (2021)[39] | TCGA | 350 | IV | Cox | 0.713 |
| 28 | Yang, Y (2022)[40] | TCGA+GEO | 64267 | EV | Cox | 0.611 |
| 29 | Lee, TY (2015)[41] | China | 278898 | IV | Cox | 0.78 |
| 30 | Liu, YF (2020)[42] | TCGA+GEO | 1114 | EV | Cox | 0.782 |
| 31 | Bai, F (2020)[43] | China | 1016 | IV | LR | NS |
| 32 | Wang, P (2018)[44] | China | 290 | IV | LR | 0.731 |
| 33 | Wang, XD (2021)[45] | China | 1164 | EV | DL | 0.990 |
| 34 | D'Journo, XB (2021)[46] | IESG | 8403 | IV | LR | 0.64 |
| 35 | Zhu, M (2022)[47] | Britain | 420964 | IV | Cox | NS |
| 36 | Wang, J (2022)[48] | TCGA | 1000 | IV | Cox | 0.86 |
| 37 | Chen, XW (2020)[49] | GEO | 475 | IV | Cox | NS |
| 38 | Zheng, H (2021)[50] | TCGA+GEO | 431 | IV | Cox | 0.785 |
| 39 | Lin, ZK (2022)[51] | SEER | 18752 | IV | LR | 0.703 |

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| 40 | Praud, D (2016)[52] | SNIIRAM+P MSI | 36435 | IV | RE | NS |
| 41 | Pietrantonio, F (2019)[53] | Several countries | 1556 | IV | Cox | NS |
| 42 | Huang, S (2021)[54] | China | 400 | EV | LR+RF | 0.83 |
| 43 | Png, CW (2022)[55] | China | 89 | IV | LR | 0.82 |
| 44 | van den Boorn, HG (2019)[56] | Holland | 4763 | IV | Cox | 0.68 |
| 45 | Jiang, F (2022)[57] | TCGA+GEO | 未说明 | EV | Cox | 0.655 |
| 46 | Lei, L (2022)[58] | TCGA | 407 | IV | Cox | 0.8790 |
| 47 | Chen, T (2019)[59] | TCGA | 134 | IV | SVM | 0.950 |
| 48 | Guan, KL (2020)[60] | TCGA+GEO+ HPA | 486 | IV | Cox | 0.52~0.73 |
| 49 | Cui, YF (2022)[61] | China | 719 | IV | DL | 0.829 |
| 50 | Lee, IS (2021)[62] | GEO+ South Korea | 675 | EV | RF+LR+Cox | 0.85 |
| 51 | Sohn, BH (2017)[63] | TCGA+ South Korea | 961 | EV | DT+Cox | NS |
| 52 | Cai, WY (2020)[64] | TCGA+ACRG +GEO | 2533 | EV | Cox | 0.754 |
| 53 | Bai, Y (2020)[65] | TCGA | 373 | EV | LR+Cox | 0.79 |
| 54 | Wang, YN (2022)[66] | China | 284 | IV | DL(GNN) | 0.76~0.82 |
| 55 | Zhang, C (2021)[67] | GEO | 300 | IV | Cox | 0.676 |
| 56 | Xue, SM (2022)[68] | TCGA+GEO+ China | 347 | EV | Cox | 0.702 |
| 57 | Zhou, LQ (2021)[69] | GEO+GTEx+ TCGA | 407 | EV | Cox | 0.614 |
| 58 | Chen, J (2022)[70] | TCGA+GEO | 334 | EV | Cox | 0.662 |
| 59 | Feng, B (2021)[71] | MDSP+ China | 2168 | EV | DL(TL)+LR | 0.921 |
| 60 | Wang, S (2021)[72] | China | 7945 | IV | LR | 0.615 |
| 61 | Li, J (2021)[73] | TCGA+GEO+ HADb+MSig DB | 714 | EV | Cox | 0.64 |
| 62 | Zhang, YH (2018)[74] | GEO+ArrayEx press+TCGA | 654 | EV | Cox | NS |
| 63 | Qiu, LX (2020)[75] | China | 2287 | IV | LR+DT | 0.684 |
| 64 | Gao, B (2021)[76] | TCGA | 350 | EV | Cox | 0.701 |
| 65 | Luo, D (2021)[77] | TCGA+GEO | 660 | EV | Cox | 0.912 |
| 66 | Han, ZX (2022)[78] | China | 183 | IV | DL(CNN)+SV M+MLP | NS |
| 67 | Jiang, YM (2018)[79] | China TCGA+ | 1591 | EV | Cox | 0.754 |
| 68 | Sun, ZP (2020)[80] | miRTarBase+ miRDB+ | 329 | IV | Cox | 0.868 |

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| | | TargetScan | | | | |
| 69 | Gu, C (2020)[81] | China | 335 | IV | Cox | 0.935 |
| 70 | Zhu, X (2023)[82] | CKB+China | 435673 | EV | Cox | 0.754 |
| 71 | Murphy, John D (2023)[83] | China | 546 | IV | Lasso | 0.7341 |

TCGA: The Cancer Genome Atlas. GEO: Gene Expression Omnibus. SEER: Surveillance, Epidemiology, and End Results Program. SNIIRAM: Système National d'Information Inter-Régimes de l'Assurance Maladie. PMSI: Programme de Médicalisation des Systèmes d'Information. HPA: Human Protein Atlas. ACRG: Asian Cancer Research Group. GNN: Graph Neural Network. GTEx: Genotype-Tissue Expression. MDSP: the Mars Data Science Platform (<https://www.marsbigdata.com/>). HADb: the Human Autophagy Database. MSigDB: Molecular Signatures Database. miRTarBase: The experimentally validated microRNA-target interactions database. miRDB: MicroRNA Target Prediction Database. TargetScan: (targetscan.org/). CKB: China Kadoorie Biobank. LR: Logistics Regression. RF: Random Forests. SVM: Support Vector Machine. NB: Naïve bayes. XGB: eXtreme Gradient Boosting. FCM: Fuzzy Cognitive Map. ANN: Artifical Neural Network. DT: Decision Tree. CNN: Convolutional Neural Networks. NS: Not stated. DL: Deep Learning. RE: Random Effects. GNN: Graph Neural Networks. TL: Transfer Learning. MLP: Multilayer Perceptron. IV: Internal verification. EV: External verification.