KataGo is a strong open-source program, implementing a range of features and techniques improving beyond the baseline AlphaZero algorithm (MCTS + deep residual convnet + reinforcement learning loop). This includes several novel and original techniques as well as many more techniques similar to ideas from broader machine learning literature but that had not yet been publicly researched or tried for Go. It also includes several features and techniques focused specifically for helping the Go community and being a useful tool for users rather than competing for strength.

* Major algorithmic techniques: auxiliary value, policy, ownership, score training targets, playout cap randomization, global pooling layers, policy surprise weighting, policy target pruning, shaped dirichlet noise, and others.

* Major user-oriented features: predicts and analyzes score and territory, handles multiple rules and komi values including ancient "group tax" rules, same single network plays all board sizes from 7x7 to 19x19, special asymmetric training to improve handicap game play.

For more details, see:
https://arxiv.org/abs/1902.10565
and:
https://github.com/lightvector/KataGo/blob/master/docs/KataGoMethods.md

Code and releases are at:
https://github.com/lightvector/KataGo
Public training run is ongoing at:
https://katagotraining.org/