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Andscacs Logo ^[2]

Andscacs,

an [UCI](#) compliant chess engine by [Daniel José Queralto](#). Its development started in September 2013, and the first release was published in February 2014 ^[1]. Andscacs soon evolved to a top engine, becoming runner-up at the [IGWT III](#) losing the final from [Chiron](#) with the narrowest margin of $4\frac{1}{2} - 5\frac{1}{2}$, but taking revenge one year later at the [IGWT IV](#), this time with $6\frac{1}{2} - 5\frac{1}{2}$ to its favour. At the [Tenth Annual ACCA World Computer Rapid Chess Championship 2016](#), Andscacs emphasized its ambitions, and became runner-up without losing a single game, but 12 wins and 3 draws, and thus the only program preventing later winner [Komodo](#) from a 100% score.

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Description

Being a [bitboard](#) engine, Andscacs determines [sliding piece attacks](#) ray-wise, quite similar to the [classical approach](#) ^[3]. Since version **0.70**, Andscacs uses [magic bitboards](#) to speed the attack calculations ^[4].

Search

Andscacs applies a [principal variation search](#) with [tranposition table](#) inside an [iterative deepening](#) framework with [aspiration windows](#) ^[5]. Beside [quiescence](#), [selectivity](#) is due to [adaptive null move pruning](#), [late move reductions](#), [check extensions](#), [singular extensions](#), [razoring](#) and [futility pruning](#). [Move ordering](#) is further improved by the [killer heuristic](#), [IID](#) and [static exchange evaluation](#), the latter also used to [prune](#) bad [captures](#) in quiescence and futile moves near the horizon. Since version **0.70**, a [hash move](#) is tried in [quiescence search](#) even if it's a [quiet move](#). Trying only [captures](#) and [promotions](#) was clearly weaker ^[6]. Version 0.80 in April 2015 introduced a [threaded parallel search](#) ^[7], a [Lazy SMP](#) approach ^[8].

Evaluation

The [evaluation](#) considers [material imbalances](#), and has [piece-square tables](#) for [middlegame](#) and [endgame](#), [piece values](#) adapted by type of positions (open, closed), different types of [piece mobility](#), [king safety](#) and sophisticated [pawn structure](#) evaluation with focus on [passed pawns](#), most features smoothed out between [game phases](#) by a [tapered eval](#). Since version 0.62u, evaluation scores are cached with a small [evaluation hash table](#) ^[9].

Tuning

The about 200 evaluation features were [tuned](#) with 750.000 positions to minimize the [standard deviation](#) of [Stockfish's](#) and Andscacs' static evaluation, which initially added a nice Elo boost to Andscacs ^[10], without playing too similar.

Forum Posts

2014

- [New engine - Andscacs](#) by [Daniel José Queraltó](#), [CCC](#), February 06, 2014
- [Andscacs - New version](#) by [Daniel José Queraltó](#), [CCC](#), February 09, 2014
- [Andscacs - New version](#) by [Daniel José Queraltó](#), [CCC](#), March 03, 2014
- [Andscacs - New version 0.62w](#) by [Daniel José Queraltó](#), [CCC](#), April 10, 2014
- [Andscacs - New version 0.62x](#) by [Daniel José Queraltó](#), [CCC](#), May 05, 2014
- [Andscacs - New version 0.64](#) by [Daniel José Queraltó](#), [CCC](#), June 07, 2014
- [Andscacs - New version 0.70](#) by [Daniel José Queraltó](#), [CCC](#), November 05, 2014
- [Changes in Andscacs 0.70](#) by [Daniel José Queraltó](#), [CCC](#), November 08, 2014
- [Andscacs - New version 0.71](#) by [Daniel José Queraltó](#), [CCC](#), December 17, 2014
- [Changes in Andscacs 0.71](#) by [Daniel José Queraltó](#), [CCC](#), December 19, 2014

2015

- [Andscacs - New version 0.72](#) by [Daniel José Queraltó](#), [CCC](#), February 01, 2015
- [Andscacs - Test version 74024](#) by [Daniel José Queraltó](#), [CCC](#), April 09, 2015
- [Trying to improve lazy smp](#) by [Daniel José Queraltó](#), [CCC](#), April 11, 2015 » [Lazy SMP](#)
- [Empirical results with Lazy SMP, YBWC, DTS](#) by [Kai Laskos](#), [CCC](#), April 16, 2015 » [Lazy SMP](#), [YBWC](#), [DTS](#)
- [Andscacs - New version 0.80](#) by [Daniel José Queraltó](#), [CCC](#), April 17, 2015
- [Andscacs - New version 0.81](#) by [Daniel José Queraltó](#), [CCC](#), June 20, 2015
- [Andscacs - New version 0.81 - Detailed changes](#) by [Daniel José Queraltó](#), [CCC](#), June 20, 2015
- [Andscacs - New version 0.82](#) by [Daniel José Queraltó](#), [CCC](#), August 16, 2015
- [Andscacs - New version 0.83](#) by [Daniel José Queraltó](#), [CCC](#), November 10, 2015
- [Andscacs - New version 0.84](#) by [Daniel José Queraltó](#), [CCC](#), December 07, 2015
- [Re: Why computing K that minimizes the sigmoid func. value?](#) by [Daniel José Queraltó](#), [CCC](#), December 07, 2015 » [Texel's Tuning Method](#)

2016

- [Andscacs - New version 0.85](#) by [Daniel José Queraltó](#), [CCC](#), January 22, 2016
- [Andscacs - New version 0.86](#) by [Daniel José Queraltó](#), [CCC](#), March 24, 2016
- [Singular extension](#) by [Daniel José Queraltó](#), [CCC](#), June 11, 2016 » [Singular Extensions](#)
- [Andscacs 0.86.196 BMI2 is available ...](#) by [Frank Quisinsky](#), June 15, 2016 » [BMI2](#)
- [Andscacs - New version 0.87](#) by [Daniel José Queraltó](#), [CCC](#), June 19, 2016

- [Andscacs - New version 0.872](#) by [Daniel José Queraltó](#), [CCC](#), July 23, 2016
- [Detailed changes in Andscacs from 0.86 to 0.872](#) by [Daniel José Queraltó](#), [CCC](#), July 25, 2016
- [Andscacs, developing version](#) by [Daniel José Queraltó](#), [CCC](#), October 22, 2016
- [Andscacs - New version 0.88](#) by [Daniel José Queraltó](#), [CCC](#), October 28, 2016

2017

- [Andscacs - New version 0.90](#) by [Daniel José Queraltó](#), [CCC](#), March 25, 2017
- [Andscacs - New version 0.91](#) by [Daniel José Queraltó](#), [CCC](#), May 09, 2017
- [Andscacs new PH feature: first impressions](#) by [Rodolfo Leoni](#), [CCC](#), July 08, 2017 » [Persistent Hash Table](#)
- [Andscacs - New version 0.92](#) by [Daniel José Queraltó](#), [CCC](#), September 17, 2017
- [Andscacs - New version 0.921 with source](#) by [Daniel José Queraltó](#), [CCC](#), November 04, 2017
Re: [Andscacs - New version 0.921 with source](#) by [Jon Dart](#), [CCC](#), November 09, 2017 » [TCEC Season 10](#)
Re: [Andscacs - New version 0.921 with source](#) by [Ronald de Man](#), [CCC](#), November 11, 2017
- [Andscacs, test version](#) by [Daniel José Queraltó](#), [CCC](#), December 31, 2017

2018

- [Andscacs - New version 0.93](#) by [Daniel José Queraltó](#), [CCC](#), January 14, 2018

External Links

Chess Engine

- [Andscacs Homepage](#)
- [Andscacs](#) in [CCRL 40/40](#)

Misc

- Jorge Retamoza Cuarteto - [La Cachila](#), [Andorra Jazz Hivern Fest 2013](#), [YouTube](#) Video
[Claudio Constantini](#), [Alejandro Di Costanzo](#), [Hernán Hock](#), [Jorge Retamoza](#)

References

1. [^](#) [New engine - Andscacs](#) by [Daniel José Queraltó](#), [CCC](#), February 06, 2014
2. [^](#) [Andscacs Logo with Flag of Andorra](#), [Andscacs Homepage](#)
3. [^](#) [Re: Andscacs - New version](#) by [Daniel José Queraltó](#), [CCC](#), March 03, 2014
4. [^](#) [Andscacs - New version 0.70](#) by [Daniel José Queraltó](#), [CCC](#), November 05, 2014
5. [^](#) [New engine - Andscacs](#) by [Daniel José Queraltó](#), [CCC](#), February 06, 2014
6. [^](#) [Changes in Andscacs 0.70](#) by [Daniel José Queraltó](#), [CCC](#), November 08, 2014
7. [^](#) [Andscacs - New version 0.80](#) by [Daniel José Queraltó](#), [CCC](#), April 17, 2015

8. [^ Trying to improve lazy smp](#) by [Daniel José Queralto](#), [CCC](#), April 11, 2015
9. [^ Andscacs Homepage](#)
10. [^ Re: New engine - Andscacs](#) by [Daniel José Queralto](#), [CCC](#), February 06, 2014

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Andscacs	Jan 16, 2018
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IGWT IV	May 17, 2017
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Singular Extensions	Jan 9, 2018
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TCEC Season 11	Apr 18, 2018
TCEC Season 9	Nov 6, 2017
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WCRCC 2016	Jun 27, 2017

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