

## Table of Contents

[Features](#)

[Board Representation](#)

[Search](#)

[Evaluation](#)

[Misc](#)

[See also](#)

[Forum Posts](#)

[External Links](#)

[Chess Engine](#)

[Misc](#)

[References](#)

[What links here?](#)

[Home](#) \* [Engines](#) \* **Sloppy**

### Sloppy,

an [open source chess engine](#) by [Ilari Pihlajisto](#), written in [C](#) to build executables to run under [Windows](#), [Linux](#) and [OS X](#), compliant with the [Chess Engine Communication Protocol](#). Sloppy is released under the [GPLv3](#) license, and was first published in October, 2007 <sup>[1]</sup>. Sloppy is full of [low-level trickery](#) with [bitwise operators](#), efficient [data structures](#) and [algorithms](#) <sup>[2]</sup>. Starting with [rotated bitboards](#) <sup>[3]</sup>, it uses [magic bitboards](#) based on [Pradu Kannan's](#) implementation <sup>[4]</sup> to determine [sliding piece attacks](#). Sloppy **0.2.0**, released in February 2008, supports [Daniel Shawul's Scorpio Bitbases](#) <sup>[5]</sup>.

## Features

<sup>[6]</sup>

## Board Representation

- [Bitboards](#)
- [Magic Bitboards](#)
- [Legal Move Generation](#)

## Search

- [Iterative Deepening](#)
- [PVS / Alpha-Beta](#)
- [Transposition Table](#)
- [Zobrist Hashing](#)
- [Quiescence Search](#)
- [Selectivity](#)
  - [Check Extensions](#)
  - [Passed Pawn Extensions](#)
  - [Recapture Extensions](#)
  - [Futility Pruning](#)
  - [Mate Distance Pruning](#)
  - [Null Move Pruning](#)
  - [Late Move Reductions](#)
- [Move Ordering](#)
  - [Hash Move](#)
  - [PV-Move](#)
  - [Internal Iterative Deepening](#)
  - [Static Exchange Evaluation](#)
  - [Killer Heuristic](#)

## Evaluation

- [Material](#)
- [Tapered Eval](#)
- [Piece-Square Tables](#)
- [Mobility](#)
- [Trapped Pieces](#)
- [Tempo](#)
- [Evaluation Patterns](#)
  - [Outposts](#)
  - [Rook on Open and Semi-open File](#)
  - [Rook on Seventh Rank](#)
- [Pawn Structure](#)
  - [Pawn Hash Table](#)
  - [Backward Pawn](#)
  - [Isolated Pawn](#)
  - [Doubled Pawn](#)

- [Passed Pawn](#)
- [Unstoppable Passer](#)
- [Candidate Passed Pawn](#)
- [King Pawn Tropism](#)
- [King Safety](#)
  - [Castling rights](#)
  - [Pawn Shelter](#)
  - [Pawn Storm](#)
  - [Attacking King Zone](#)
  - [King Queen Tropism](#)

## Misc

- [Opening Book](#)
  - [Book Learning](#)
  - [AVL tree](#)
- [Perft](#)
- [Scorpio Bitbases](#)

## See also

- [Cute Chess](#)
- [Cutechess-cli](#)

## Forum Posts

- [Sloppy 0.1.1 released](#) by [Ilari Pihlajisto](#), [CCC](#), October 23, 2007
- [Some sloppy results](#) by Tony Thomas, [CCC](#), November 04, 2007
- [Sloppy 0.2.0 released](#) by [Ilari Pihlajisto](#), [CCC](#), February 06, 2008
- [Results of Crafty 22.0, Sloppy 0.2.0 and Atlanchess 4.1](#) by Tony Thomas, [CCC](#), February 24, 2008
  - » [Crafty](#), [AtlanChess](#)
- [Sloppy experiment, results after 1 cycle](#) by Tony Thomas, [CCC](#), March 01, 2008

## External Links

### Chess Engine

- [Sloppy : Home](#)
- [GitHub - cutechess/sloppy: Chess engine using the XBoard chess protocol](#)
- [Twitchy Synapse - Sloppy](#) by [Ilari Pihlajisto](#)
- [Index of /chess/engines/Jim Ablett/SLOPPY](#) compiled by [Jim Ablett](#), hosted by [Kirill Kryukov](#)
- [Sloppy](#) at [CCRL 40/40](#)

## Misc

- [sloppy - Wiktionary](#)
- [Sloppy seconds from Wikipedia](#)
- [Sloppy Meateaters - Drags And Squares, Conditioned By the Laugh Track \(2005\), YouTube](#) Video

## References

1. [^ Sloppy : Home](#)
2. [^ Twitchy Synapse - Sloppy](#)
3. [^ sloppy/CHANGES at master · cotechess/sloppy · GitHub](#)
4. [^ sloppy/magicmoves.c at master · cotechess/sloppy · GitHub](#)
5. [^ Sloppy 0.2.0 released](#) by [Ilari Pihlajisto](#), [CCC](#), February 06, 2008
6. [^ Features based on sloppy/src at master · cotechess/sloppy · GitHub](#)

## What links here?

Page	Date Edited
<a href="#">AtlanChess</a>	Sep 15, 2016
<a href="#">Cute Chess</a>	Jul 20, 2017
<a href="#">Engines</a>	Mar 10, 2018
<a href="#">Ilari Pihlajisto</a>	Sep 17, 2016
<a href="#">Sloppy</a>	Sep 17, 2016

[Up one level](#)