

CoCoALib

	2025-2				2025-3				2025-4				2025-5				2025-6				2025-7			
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CoCoA																								
CoCoALib	CoCoALib																							
MinPolyQuot not documented																								
New function IsInSymbols																								
CoCoALib releases on redmine																								
CoCoALib - CoCoALib-0.99850																								
Release CoCoALib 0.99850																								
CoCoALib - CoCoALib-0.99880																								
Matrix equation solving; linear (...)																								
Improve threadsafety																								
Matrix equation solving: LinKer																								
Printing polynomials - spaces between (...)																								
Play with GIT																								
Error: ERR::NotNonZero instead (...)																								
Elim(vector<long>) as PPOrderingCtor																								
Syzygy for modules: non-homogeneous (...)																								
Error codes: use same code for (...)																								
LongRange: in which file should (...)																								
Impl small non-prime finite fields (...)																								
DistrMPolyClean does not use MemPool (...)																								
MatrixOrderingMod32749Impl: test (...)																								
Update normaliz interface?																								
Better errors: give supplementary (...)																								
SLUG: elimination																								
Test whether a symbol is in a ring																								
DivMask: extend interface?																								
Implement "elim" in CoCoALib																								
Cleanup MinPoly code																								

implicit, ImplicitHypersurface: (...)
Redesign ideals
LinSolve for matrices over FFp
strict enum types: C++11 extension
New function: cardinality of finite (...)
FlagManager for bool/bool3 flags
MachineInt or long for args which (...)
Separate configure scripts for (...)
MachineInt: change semantics?
IsRadical for ideal?
New function: multiplicity and (...)
Improve saturate
Slug: Polynomial ring constructor (...)
Revive code for SelfSaturating (...)
SLUG: factorization of x^{9999}
Separate install script for CoCoALib?
Canonical homomorphism for (some) (...)
interval arithmetic
Clean up SparsePolyOps-MonomialIdeals
Naming convention mistakes
IsZeroDet: new fn
New function: SubmoduleOfGBasis
Frobby version number
factor SEGV -- too large characteristic
C++14: Use type auto where appropriate
New function: MinPoly for pseudo-zero-dimensional (...)
Ideals with trivial GBasis
Tidy CoCoALib test directory
Determinant & Inverse of matrix (...)
Factor of multivariate sometimes (...)
exgcd over integers (ZZ)
PrimaryDecomposition: a interesting/pathological (...)
C++14: use the new for loop syntax (...)
ideal ctor where given gens are (...)

TmpLDP uses srand and time
RingID counter increased inside (...)
Type ideal for ZZ[x[1..n]]
GlobalManager: create SignalWatcher (...)
Oddly slow GBasis computation (slow (...))
Make class RingElemVector?
RadicalZeroDim with extra parameter (...)
Remove flag IhaveGBasisValue?
DenseMatrix: use template impl (...)
HNF: Hermite Normal Form
Start using C++14 "move" capability
What is the difference between (...)
mul(MAT,MAT,MAT)
Simple syntax for making a quotient (...)
Doc for normaliz fns
Documentation for SparsePolyOps?
Better test for univariate-ness (...)
Unexpectedly slow example with (...)
gfan does not "deinitialize"
Default ctor for rings
Doc for module term orderings
matrix.H and MatrixView.H
ker_H needs care
Use noexcept
DynamicBitset missing arg checks
cmp for machine integers
Detect updated versions of external (...)
Clean time.C
Documentation for PrimaryDecomposition
Unused variables, params, data (...)
NR for polys with coeffs in PID
interreduce: make monic if over (...)
rref slower than expected (maybe) (...)
Improve CertifyNotPower

txt2tags: problem with filenames (...)
geobucket: documentation
Compilation on Windows: problems (...)
GBasis over ZZ: port to CoCoALib
Generalize prim
Review File subtree hierarchy
Build also dynamic/shared library (...)
Review examples
release-source script: use shell (...)
Unsigned long for indexes (& sizes?)
IsIrred in ZZ[x,y]
RingBase::mySwap needed?
Shell scripts: Shebang line, etc
Threadsafty, multithreading: optional (...)
Symlink directory for external (...)
ProgressReporter: prepare for new (...)
Development releases?
ProductBigInt (also ProductBigRat???)
DivAlg in CoCoALib
Crufft in ExtLibs-Normaliz.C
ApplySPRCodomain: relax power/exponent (...)
FactorINT: funny order
Clean TmpGOperations, and remove (...)
Homogenization of an ideal with (...)
Suggestion about Graded polynomial (...)
MinGens gives non minimal gens (...)
MinGens could be faster
Implement Truncated GBases for (...)
Implement GBMill (aka Groebner (...)
July 2023
IdealOfPoints: allow duplicate (...)
deg(f) is slow if f is long
gcd(f,f) is slow
Verbosity messages: avoid printing (...)

VerificationLevel: just 3? Low, (...)
Homogenizer
Make CoCoALib test file for radical
Iterator design: compatible with (...)
CpuTimeOut: arg of type ErrorContext?
Use ErrorContext instead of string (...)
myFinalizeGBasis ("Final clean (...)
Computing in sub polyring
Conversion from SmallPrime to UNSIGNED (...)
BuildInfo
Error codes: "Not..." for "blah (...)
New constructor for PolyRing with (...)
Make ex-syz.C
Check include guards
Documentation: indexXX.html should (...)
CoCoALib - CoCoALib-0.99900
Redmine Administration
Design new errors using inheritance
Which names to use? Intersection/saturation (...)
New function: IdealWithIncrementalGBasis(l, (...)
Documentation: translation table
New class: exterior algebra
ideal: does const ourGetPtr really (...)
Create PolyOps-RingElem?
Move to C++14 (skipping C++11)
subresultant
HilbertDriven Buchberger Algorithm
Filling matrix row/col from a vector
GFan: port CoCoA_5 functions into (...)
Adjoin indets to a poly ring
Get indexed indets from a polyring
Idea for for loops
Extended rationals: PlusInfinity (...)
submat of a submat

SLUG: Printing PPs with many indets
Convenient RingHom pseudo-ctors
Factorization in $K(a,b)[x,y]$
ElimMat is slow
Sparse matrix (SparseMat)
Coding guidelines
Signal handler not portable?
Intersection of Ideals: has GBasis?
Implement monic0(f) for the case (...)
Add LM to cocoalib ?
MachineInt: chase through ULL (...)
Documentation: a good model to (...)
swap for new classes
Random and threadsafe?
Suggestion: Add "JumpTo" function (...)
Use C++ attributes
Finalize design for ideals in CoCoALib
Code & doc structure: one-big-file (...)
Add flag lhaveHomogGensValue (...)
Add function IsHomog3(l)?
Add new function for IsInRadical (...)
Add a function CleanupGens making (...)
Tidying ideal generators (for non-polynomial (...))
Improve trivial operations with (...)
Use long long (at least sometimes)?
Release CoCoALib 0.99900
Some tests have become slower
Ensure tests do not need too much (...)
JSON and UUID
CoCoALib - CoCoALib-1.0
Sort out RingElem, RefRingElem, (...)
List of all functions in CoCoALib
printing polynomials
keywords in documentation

Cleanup header for ring classes (...)
Error Codes
automatic creation of all function (...)
Introduce PartialHom
Ideals of polynomials
LT over QQ: surprisingly slow
IdealOfPoints with generic coeffs
New datastructures directory
Convert DUPFF code to C++
Better GCD
Design problem in ideals
Convenience ring ctors and homs
Buchberger-Moeller (parent task)
 Buchberger-Moeller: fast modular (...)
 Buchberger-Moeller: impl via (...)
Buchberger-Moeller: input conversions
Makefile dependencies
RingOf rather than owner? (and (...))
Iterated CanonicalHom
GCD normalization (e.g. monic)
Convert old "task table" into redmine
IsStdGraded: add for PPOrdering, (...)
PPWithMask needs checking
Example for change of coordinates (...)
HilbertBasis from Normaliz: full-lattice (...)
Generator for random ring elements
Documentation for QBGenerator needs (...)
No test for QBGenerator
Approx QIR
Transcribe C4 code for GCD in QQ[x]
Multivariate lifting
Move the various <matrix>::mySetEntry (...)
Forward declarations
Eliminate class RefPPMonoidElem?

Store unique copy of FF(p) in GlobalManager
Global setting: to use IsProbPrime (...)
PrimeField -- new fn?
Modules design: brainstorming
Compilation on M\$Windows: Visual (...)
FreeModule: unique copy?
Add doc for ApproxPts2
submodule constructor different (...)
C++ nasty surprises
Why is DMPI slower than DMPClean?
Module homs
Missing documentation and tests (...)
CoCoAServer: what future, what (...)
Resolution/morse: integrate Mario (...)
add resolution data type
implement algorithm(s) for resolutions
PPMonoidElemAlias: redesign PPMonoidElem (...)
add myHilbertSeries member field (...)
add myJMill member field to ideal
NewFreeModule of dimension 0
Minimal syzygies (optimized implementation)
Allow user to give a name to a (...)
Error names and error messages (...)
Semantics of IsPrintedWithMinus
Improve UPoly eval at BigRat for (...)
MemPool: order free blocks?
Polynomial multiplication (product (...)
Port RealRoots to C++
Eigenvectors
Which sets of generators in an (...)
LinearSimplify: port to CoCoALib
Unique copies of rings -- smart (...)
Clang: automatic bug finding
Documentation: write doc for RingDenseUPolyClean

Quick/correct flag for bool3 fns
Fn to "flatten" multiple polynomial (...)
Make squarefreefactor work in multiple (...)
FloatStr uses too much memory
Functions to clean up a factorization
elim using RingTwinFloat triggers (...)
add myResolution member field (...)
Reconsider overloaded virtual mem (...)
Subrings
Temporary file for experimentation
FloatApprox for TwinFloat values?
Documentation for ReductionCog
Allow use of RingElem instead of (...)
Split SparsePolyRing.H into two (...)
Investigate using cmake for configuration
New function for printing with (...)
Implement gin (generic initial (...)
Problem with template instantiation (...)
configure: check all libraries (...)
Redesign CRTMill
Wikipedia
Gaussian integer and rationals (...)
Complex twin-floats
Shadow CoCoA namespace to help (...)
What is test-Dynamic1.C
Buchberger-Moeller: add option (...)
Unique copies of free modules?
Optimized algorithms for implicitization (...)
Laurent polynomials
Integrate Janet/Pommaret basis (...)
factor: multivariate + finite characteristic
Matrix determinant over multivariate (...)
Credits to CoCoALib contributors
Accumulator (like a geobucket)

MemPool: make it easier to get (...)
PPMonoid: add fn to check for overflow (...)
Use DivMask inside QBGenerator
myAddMul in poly rings
PolyAlgebraHom (PolyRingHom) evaluate (...)
Fault tolerant rational reconstruction: (...)
Remove cruft from test files
Add more operations between modules (...)
Example database: Slow ideal equality (...)
Noncommutative algebra "of solvable (...)
Betti numbers, betti diagram
Extend homomorphism to polynomial (...)
Addition of sparse (multivariate) (...)
View PP exponent vector (and order (...)
Problem with GBasis in tower of (...)
Investigate using Boost.build instead (...)
configure: have option to say to (...)
GlobalManager: initialization compatible (...)
ExternalLib-CDD: (needed by GFan)
CoCoALib cone
PPMonoid with 1 extra "exponent"?
CRTMill::myAddInfo accept modulus (...)
Makefile: problem not seeing when (...)
GroebnerFan/ExternalLib-GFan: improve (...)
threadsafety: Scott Meyers's advice (...)
finite fields: global register (...)
Remove refcounts from RingElem?
No doc for DistrMPolyInIFpPP
Clean code for DistrMPolyClean
SmallFpImpl: make it faster
vector of "indets" in each PPMonoid?
PPOrdering: use it to compute WDeg?
Alg Extn by non-zero dim ideal
FastCmp for degree -- useful?

PPMonoid pseudo-ctor without explicit (...)
GenRepr in CoCoALib?
F5 with 3 args?
Sparse matrices
MachineInt: function for checking (...)
Generalize grading matrix
UIBC: need include file in RingWeyl.C
Make Mario's new code threadsafe
factor is very slow on some simple (...)
Differential algebra
SparsePolyIter: make more compatible (...)
GINV: alex basis
NewPolyRing: tidy up the many different (...)
PPMonoidSparse: comparisons are (...)
IsIrred: correct design?
SmallFpImpl: different repr for (...)
bool3: add some logical operations?
factor: too slow on largish multivariate (...)
Impl faster multiplication for (...)
DistrMPolyInIPP::myPushFront and (...)
IsIrred3: fast 3-way irred test (...)
myIsEqual, myCmp: direct comparisons (...)
SmallFpDouble: which impl of InvMod (...)
External libraries: keep copy of (...)
Read input from SymbolicData database
New function: quorem for univariate (...)
Hilbert Driven GBasis
Design GBMill
Fn to read symbol range (SymbolRange)
Documentation: check layout of (...)
Printing TwinFloat as (rational) (...)
LinDepMill: Mill for linear dependencies
Slow NF example
Weights in ElimMat?

ex-PolyIterator

QIR/RealRootRefine: improve behaviour (...)

GFan: require version newer than (...)

GCD: add special case if args are (...)

Poly ring homomorphism to change (...)

C++11: Mario's Hilbert scheme code

GlobalManager: name of object in (...)

RowMat, ColMat with arg an empty (...)

New "LF" function which is based (...)

JanetBasis gives error indet index (...)

GroebnerFan: slow examples

Printing ring for ideals (or just (...))

GroebnerFan: ERROR: Matrix must (...)

Slug: MakeTermOrd (rk calls in (...))

invalid pointer in "free"

WEB SITE: HTML is not clean!

Ctors for exceptions/errors

Pseudo-zero-dim ideals

Better printing of negative coeffs

SqFreeFactor: should it work over (...)

Organize better the documentation (...)

mySquare and myPowerSmallExp

New fn: transform ideal with ring (...)

Printing for RingElem

Clean up revised RatReconstructByContFrac (...)

Upper bound for value of poly in (...)

Matrix rank is slow (over QQ)

Non-standard DegRevLex (NonStdDegRevLex, (...))

New function: Threadsafe RandomLinearForm (...)

exgcd; solve Bezout equation

Make a poly ring QQ[x,y,z] also (...)

Ideal equality

Ideal Ops: sort-cuts for trivial (...)

Port old "clever" code for matrix (...)

<p>Improve RealRoots: compute sqfr (...)</p> <p>Improve RootBound</p> <p>All PPs of given wdeg</p> <p>gcd: low degree but big coeffs (...)</p> <p>RandomUnimodularMat is slow with (...)</p> <p>French students' example with GFan</p> <p>Create two separate radical fns (...)</p> <p>DynamicBitset::lamAll1s</p> <p>Unified Gaussian reduction impl</p> <p>Benchmarks?</p> <p>C++17: notes about updating</p> <p>slimgb: Brickenstein, singular</p> <p>Clean out OLD CODE?</p> <p>CoCoALib - removed/duplicates</p> <p>CoCoALib: ideas for student projects</p>	
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