NEWS for pracma version 0.3-0

April 9, 2011

NEWS *pracma News*

CHANGES IN VERSION 0.3-0

OTHER CHANGES:

- New version of news.Rd, news.pdf.
- More test functions for root finding and quadrature.

CHANGES IN VERSION 0.2-9

NEW FUNCTIONS:

- fnorm() and the Runge function runge().
- contfrac(), rat(), and rats() for continuous fractions.
- meshgrid() and magic().

CHANGES IN VERSION 0.2-8

NEW FUNCTIONS:

- quad() adaptive Simpson quadrature.
- Minimum finding with fibsearch() and golden_ratio().
- Root finding with newton(), secant(), and brentDekker().

CHANGES IN VERSION 0.2-7

NEW FUNCTIONS:

- Regular expression functions regexp(), regexpi(), regexprep() and refindall().

CHANGES IN VERSION 0.2-6

NEW FUNCTIONS:

- String functions blanks(), strtrim(), deblank(), strjust(), and strrep().
- interp1() one-dimensional interpolation (incl. spline)

CHANGES IN VERSION 0.2-5

NEW FUNCTIONS:

- Matlab functions mode(), clear() and beep().

CHANGES IN VERSION 0.2-4

NEW FUNCTIONS:

- primroot() finds the smallest primitive root modulo a given n; needed functions are modpower() and modorder().
- humps() and sinc(): Matlab test functions.
- Root finding through bisection: bisect(), regulaFalsi().
- outlierMAD(), findpeaks(), and piecewise().
- polycnv() for polynomial multiplication.

OTHER CHANGES:

- Functions extgcd(), gcd(), and lcm() have been renamed to extGCD(), GCD(), and LCM() respectively.

CHANGES IN VERSION 0.2-3

NEW FUNCTIONS:

- strfind(), strfindi(), and findstr().
- circlefit() fitting a circle to plane points.
- mldivide() and mrdivide(), emulating the Matlab backslash operator.

CHANGES IN VERSION 0.2-2

NEW FUNCTIONS:

- vnorm() vector norm

CORRECTIONS:

- Warning about a nasty “non-ASCII input” in the savgol.RD file has been resolved.

CHANGES IN VERSION 0.2-1

NEW FUNCTIONS:

- horner() implementing the horner scheme for evaluating a polynomial and its derivative.
- savgol() Savitzki-Golay smoothing and needed pseudoinverse pinv().

RESTARTED AS VERSION 0.2-0

NAME CHANGE:

- Package renamed to ‘pracma’ to avoid name clashes with packages such as ‘matlab’ that are sticking closer to the original.

OTHER CHANGES:

- Added ‘pracma-package’ section to the manual.

CHANGES IN VERSION 0.1-9

NEW FUNCTIONS:

- reshape(), repmat(), and blkdiag() matrix functions.
- combs() chooses all combinations of k elements out of n, and randcomb() generates a random selection.
- perms() generates all permutations, randperm() a random permutation.
- Pascal triangle as pascal(); nchoosek() returns binomial coefficients.
- Some string functions: strcmp(), strcmpi(), strcat().

CHANGES IN VERSION 0.1-8

NEW FUNCTIONS:

- std() as refinement of the standard deviation function.
- ceil() and fix() as aliases for ceiling() and trunc(). [floor() and round() already exist in R.]
- Modulo functions mod(), rem() and integer division idiv().
- Integer functions related to the Euclidean algorithm: extgcd(), gcd(), lcm(), coprime(), and modinv().
- distmat() and crossn(), the vector product in n-dimensional space.

CHANGES IN VERSION 0.1-7

NEW FUNCTIONS:

- size(), numel(), ndims(), isempty(), and find().
- eye(), ones(), zeros().
- Functions returning random numbers: rand(), randn(), randi().
- linspace(), logspace(), and logseq() for linearly, logarithmically, and exponentially spaced sequences.
  Note that the functions in the 'matlab' package are not exactly mimicking the corresponding Matlab/Octave functions.

CHANGES IN VERSION 0.1-6

NEW FUNCTIONS:

- Matrix functions mdiag() and mtrace() added. inv() is introduced as an alias for solve() in R.
- Generate special matrices hankel(), rosser(), and wilkinson(). kron() is an alias for the R function kronecker().

OTHER CHANGES:

- Renamed factors() to ifactor() to distiguish it more clearly from factors as used in R.

CHANGES IN VERSION 0.1-5

NEW FUNCTIONS:

- Added functions for flipping or rotating numeric and complex matrices: flipdim(), flipud(), fliplr(), and rot90().

CHANGES IN VERSION 0.1-4

NEW FUNCTIONS:

- Added basic complex functions real(), imag(), conj(), and angle() which are essentially only aliases of the R functions Re(), Im(), and Conj().
  angle() returns the angle of a complex number in radians. The R function Mod() is here only available as abs().

CHANGES IN VERSION 0.1-3

NEW FUNCTIONS:

- Added compan() function for the 'companion' matrix; the eig() function is an alias for the R eigen()values function.
- Added the polynomial functions poly(), polyder(), polyfit(), polyint(), and polyval().
- roots() returns real and complex roots of polynomials.

OTHER CHANGES:

- Simplified the trapz() function.

CHANGES IN VERSION 0.1-2

NEW FUNCTIONS:

- Added functions from number theory: primes(), isprime() and factors().
- The corresponding function for factors() in Matlab/Octave is called factor(), but that name should not be shadowed in R!
- Added the polyarea() and trapz() functions.

CHANGES IN VERSION 0.1-1

NEW FUNCTIONS:

- Added some simple functions such as nthroot(), pow2(), and nextpow2().
- dot() and cross() functions for scalar and vector product.
- Generate matrices through vander() and hilb().

INITIAL VERSION 0.1-0

INSTALLATION: 'matlab4r' will be a pure R package without using any source code. Therefore, installation will be immediate on all platforms.

INTENTION: This package provides R implementations of more advanced math functions from Matlab and Octave (and the Euler Math Toolbox) with a special view on optimization and time series routines.

Remark: Typeset this document as:
`R CMD Rd2pdf NEWS.Rd --title="NEWS for pracma version 0.3-0".`

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