some of
my matlab functions, GUI apps and Matlab scripts

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zip files are build such that each is self contained with all the needed matlab files and .fig file (if applicable) to run each application or function from the directory created once the zip file is unzipped

Work in progress, this page is updated all the time.

No.	file name	depend	zip	description
1	COMPUTED TOMOGRAPHY, MATHEMATICS AND SIMULATION using Matlab			
2	implementation of LU Decomposition and Linear Solver using Matlab			
3	Small Matlab GUI untility to change units of a Matlab .fig file. Make sure to save a copy of your fig file before using, just in case. HTML			
4	nma_185_proj3.m	depend	zip	Solve Lotka-Volterra 2-ODE syst
5	nma_CG.m	depend	zip	conjugate gradient with pre-cond
6	nma_CG_GUI_TEST.m	depend	zip	GUI for conjugate gradient solve
7	nma_CG_TEST1.m	depend	zip	driver function for nma_CG
8	nma_CG_TEST2.m	depend	zip	another driver for nma_CG.m
9	nma_FDM_matrix_laplace_1D_Neumann_scheme_1.m	depend	zip	builds finite difference A matrix
10	nma_FDM_matrix_laplace_1D_Neumann_scheme_2.m	depend	zip	builds finite difference A matrix fo conditions

11	nma_FDM_matrix_laplace_1D_dirichlet.m	depend	zip	builds finite difference A matrix f conditions
12	nma_FDM_matrix_laplace_1D_robin.m	depend	zip	builds finite difference A matrix
13	nma_GENP2D.m	depend	zip	generate A and f for the $Au=f$ points laplacian.
14	nma_HW2_math_228B_problem3.m report	depend	zip	solves the FitzHugh-Nagumo on
15	nma_ISSPD.m	depend	zip	checks that matrix is SPD
16	nma_ISSYM.m	depend	zip	checks that matrix is symmetrix
17	nma_LaxWendroff.m	depend	zip	Class implements Lax-Wendroff
18	nma_LaxWendroff_test.m	depend	zip	driver tests nma_LaxWendroff c
19	nma_MAE121_spring_2010_lab4.m report	depend	zip	lab4 assignment MAE121 dynam
20	nma_MAE121_spring_2010_lab4Main.m	depend	zip	called by GUI to implement the davis
21	nma_P2DDIRJCB_S.m	depend	zip	script solves 2D Poission PDE iterative method
22	nma_P2DDIRSOR.m	depend	zip	Solve 2D poisson PDE on unit s
23	nma_P2DDIRSOR_S.m	depend	zip	script solves 2D poisson on unit SOR method
24	nma_PDE_parabolic_explicit_rod.m	depend	zip	solves parabolic PDE using expli
25	nma_PDE_parabolic_explicit_rod_TEST.m	depend	zip	driver for nma_PDE_parabolic_
26	nma_PDE_parabolic_explicit_rod_with_rate_BC.m	depend	zip	solve parabolic PDE using explic conditions
27	nma_PDE_parabolic_explicit_rod_with_rate_BC_TEST.m	depend	zip	driver for nma_PDE_parabolic_
28	nma_RK4.m	depend	zip	solve 1st order ODE using Rung
29	nma_SD.m	depend	zip	function solves $Au=f$ using the

30	nma_V_cycle.m	depend	zip	implement multigrid V Cycle
31	nma_advection_pde_1D.m report	depend	zip	implement HW3, Math 228B, ad
32	nma_arrow.m	depend	zip	draws an arrow annotation on fi
33	nma_c2f.m	depend	zip	implements coarse to fine grid bi
34	nma_change_figure_units.m	depend	zip	GUI main for changing figure un
35	nma_check_all_zero_boundaries.m	depend	zip	auxiliary function to validate bo
36	nma_controller_sim.m	depend	zip	main GUI file for controllor simu
37	nma_diffusion_1d.m	depend	zip	main GUI file for 1D diffusion so
38	nma_eme_121_lab1.m report	depend	zip	main GUI file for lab1 MAE121,
39	nma_euler_heun.m	depend	zip	Solve ODE using Euler-Heun (co
40	nma_euler_heun2.m	depend	zip	Solve ODE using Euler-Heun (co
41	nma_euler_midpoint.m	depend	zip	solve ODE using Euler-mid-poin
42	nma_evaluate_1D_function.m	depend	zip	evaluates string as 1D function f
43	nma_f2c.m	depend	zip	restriction operator for fine gr mapping on 2D
44	nma_findAlphaForMinDeltaV.m	depend	zip	Finds initial inclincatin correcti circular orbit
45	nma_findPointOnLine.m	depend	zip	helper function for rocket design
46	nma_find_norm.m	depend	zip	find the grid norm
47	nma_find_residue.m	depend	zip	calculates residue
48	nma_format_matrix.m	depend	zip	prints matrix of numerical data

49	nma_gen2Ddirch.m	depend	zip	helper function to generate A,b f
50	nma_generate_A_and_ARHS_for_2D_diffusion_Neumman.m	depend	zip	generate the A and B matrices u
51	nma_generate_dep_files.m	depend	zip	This function generates one text same folder it is running from. Fo the text file which contains a lis m file depends on. This uses fdep() function from m
52	nma_generate_dep_files_V2.m	depend	zip	This function generates one text same folder it is running from. Fo the text file which contains a lis m file depends on. This uses fdep() function from m march 1, 2013 clean up more, mo
53	nma_getDeltaTimeFromDeltaNu.m	depend	zip	calculates time of flight for the o
54	nma_getFlux1.m	depend	zip	flux function for PDE numerical
55	nma_getOrbitParams.m	depend	zip	find orbit parameters from the ve
56	nma_getUniversalVariable.m	depend	zip	compute the Universal Variable
57	nma_get_index.m	depend	zip	helper function to find index
58	nma_inputNumeric.m	depend	zip	read a numeric number from use types correct value
59	nma_lab2_eme_121.m report	depend	zip	main GUI file for lab2 MAE 121
60	nma_lab3_eme_121.m report	depend	zip	main GUI file for lab3 MAE 121
61	nma_lap1d.m	depend	zip	helper function to make sparse m
62	nma_lap2d.m	depend	zip	helper function to make sparse 2
63	nma_lap3d.m	depend	zip	generate 3D sparse matrix for po

64	nma_laplaceRectDirchlet.m	depend	zip	solve laplace PDE for rectangula
65	nma_laplaceRectDirchletBendCorner.m	depend	zip	solves laplace PDE for rectangul
66	nma_laplaceRectNuemann.m	depend	zip	solves laplace PDE for rectangul
67	nma_math228.m	depend	zip	main GUI file for all my math 22
68	nma_math228b_HW2_prob2.m	depend	zip	implements the refinement study
69	nma_math_228b_HW4_problem_1_part_b.m report	depend	zip	Lax-Wendroff to solve the wave e
70	nma_math_228b_HW4_problem_3.m	depend	zip	solves diffusion problem $u_t +$ method with flux limiter functio
72	nma_modal_v2.m	depend	zip	solves 3 bars and 2 springs with solution
73	nma_moveProbe.m	depend	zip	Moves probe in an orbit for delta
74	nma_orbit_simulator.m	depend	zip	main GUI file for orbit simulator
75	nma_plot_stress_diagram_in_2D_script.m	depend	zip	script to plot stress diagram, pla
76	nma_poisson_GUI.m report	depend	zip	main GUI file for poisson 2D solv
77	nma_process_eme_121_lab1.m	depend	zip	called by the Matlab GUI to solv 121
78	nma_rect_pulse_on_periodic_1D.m	depend	zip	class implements the rectangular HW3, Math 228B.
79	nma_rectangle.m	depend	zip	make an annotation of a rectang
80	nma_refinement_study_manager.m	depend	zip	class used for doing refinement s PDE class
81	nma_relax.m	depend	zip	does one iteration relaxation, call
82	nma_rescale.m	depend	zip	Nasser M. Abbasi 011212 NO E INPUT. Rescale a matrix or a ve

83	nma_rocket_design.m	depend	zip	design rocket from earth to GEC
84	nma_rocket_design_PERMUTE.m	depend	zip	helper function for rocket design
85	nma_rocket_getLagrangeMultiplier.m	depend	zip	Solves equation 5.57 in book Prussing and Conway
86	nma_rocket_mutliStageSolutionLagrange.m	depend	zip	design for a multi-stage rocket.
87	nma_rocket_solveRocketEquationOneStage.m	depend	zip	Solves for Mp (mass of properel for a given one stage rocket.
88	nma_rocket_solveRocketEquationOneStage_form2.m	depend	zip	Solves rocket equation for delta of structure and payload
89	nma_rocket_solveRocketEquationOneStage_form3.m	depend	zip	Solves rocket equation for delta of structure and payload
90	nma_romberg.m	depend	zip	generate the Romberg integratio
91	nma_romberg_test.m	depend	zip	driver to test romberg integratio
92	nma_runProbeSimulation.m	depend	zip	runs simulation of probe starting vector for some delta time
93	nma_set_figure_position.m	depend	zip	utility function, called to create
94	nma_solveProb_43.m	depend	zip	solves HW problem 4.3
95	nma_solve_2D_diffusion_ADI.m	depend	zip	Solves 2D diffusion PDE $u\_t =$ Neumann BC using cell centered
96	nma_solve_2D_diffusion_ADI_TEST_script.m	depend	zip	script to solve 2D diffusion
97	nma_solve_gauge_ODE.m	depend	zip	solves $w\_t = epsilson(w - gamm$ 228B UC Davis
98	nma_solve_reaction_ODE.m	depend	zip	solves the reaction ODE part of
99	nma_solver_Vcycle.m	depend	zip	Solve poisson 2D pde on unit s cycle method
100	nma_spline.m	depend	zip	computes the cubic splines betwe
101	nma_spline_test.m	depend	zip	driver for cubic splines using the

102	nma_spring.m	depend	zip	static class to make spring for pl
103	nma_steady_state.m	depend	zip	simulation of steady state singl harmonic input
104	nma_testfindAlphaForMinDeltaV.m	depend	zip	driver to test findAlphaForMinD
105	nma_trapezoidal.m	depend	zip	integrate a function using trape of strips.
106	nma_using_ffteasy.m	depend	zip	
107	nma_validate_dimensions.m	depend	zip	auxiliary function used by ot dimensions are consistent.
108	nma_validate_dimensions_1.m	depend	zip	auxiliary function validates input
109	nma_verify_valid_non_negative_numeric.m	depend	zip	verifies string represents non neg
110	nma_verify_valid_numeric.m	depend	zip	verfies input string represents a
111	nma_verify_valid_positive_integer.m	depend	zip	verifies input string represents p
112	nma_verify_valid_positive_numeric.m	depend	zip	verifies input string represents p
113	nma_zoom_image.m	depend	zip	zoom a gray image by factor and
114	source file implement steepest descent		zip