

TABLE 1: GP applications (Ps stands for program synthesis, Sr for symbolic regression)

Application	Authors	Aim
• Evolution of images and videos	Sims (1987 1993)	Ps
• Evolution of neural networks	Zhang and Mühlenbein (1995)	Ps
• Resolution of integral equations	Blickle (1996)	Sr
• Evolution of non-linear model of fluid flow in a coupled water tank system	Gray et al. (1996)	Sr
• Evolution of polyethylene rheological model and strain energy function of hyperelastic materials	Schoenauer et al. (1996)	Sr
• Evolution of a non-linear dynamic model of helicopter rotor speed controller and engine	Gray et al. (1997)	Sr
• Evolution of music	Johanson and Poli (1998)	Ps
• Evolution of digital circuits	Kalganova and Miller (1999)	Ps
	Iba and Terao (2000)	Ps
• Evolution of delay-time algorithms for anti-air missile proximity fuses	Nyongesa et al. (2001)	Sr
• Evolution of models of shear strength of reinforced concrete deep beams	Ashour et al. (2003)	Sr
• Evolution of temporal rules	Sætrom and Hetland (2003)	Sr
• Evolution of a dynamic model of a planar 10-bar truss	Shaw et al. (2004)	Ps
• Modelling of blown film properties	Kordon and Lue (2004)	Sr
• Rediscovery of Newton’s law of gravity	Smits et al. (2005)	Sr
• Evolution of metamodels of the structural modulus and Poisson ratio of honeycomb structures, of natural frequency and mode shape in a 9 degree-of-freedom mass-spring system	Lew et al. (2006)	Sr
• Evolution of a differential equation solution	Koza (1992)	Sr
	Buchsbaum (2007)	Sr
• Evolution of a model for a diesel engine $NO_x$ ’s emissions	Winkler et al. (2007)	Sr
• Evolution of models for the velocity to acceleration ratio in earthquakes	Kermani et al. (2009)	Sr
• Discovery of physical laws (Hamiltonian and Lagrangian)	Schmidt and Lipson (2009)	Sr
• Evolution of solutions of implicit equations	Schmidt and Lipson (2010)	Sr

Table excerpted from Umberto Armani’s PhD Thesis “Development of a hybrid genetic programming technique for computationally expensive optimisation problems. PhD thesis, School of Civil Engineering, University of Leeds, UK, 2014”, page 34.

Full references reported at page 3 (for quick access click on the reference).



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