Lorenzo Stella

Born   December 12, 1985   Email   lorenzostella@gmail.com
in   Florence, Italy   Web   lostella.github.io
Nationality Italian, American   GitHub   github.com/lostella

Professional Experience

Feb 2013 – now PhD student at IMT School for Advanced Studies, Lucca (Italy)   www.imtlucca.it
and KU Leuven, Leuven (Belgium).   www.esat.kuleuven.be/stadius

Nonsmooth optimization algorithms, applications to optimal control, distributed optimization, large-scale machine learning, image processing. Teaching assistant, exercises and laboratory sessions for the "Optimization" class, taught by Panos Patrinos, at KU Leuven.

2011 – 2012 Research Analyst at COSBI, Trento (Italy).   www.cosbi.eu

Analysis and simulation of stochastic models in systems biology (PK/PD, metabolic networks). Inference and analysis of gene regulatory networks. Development of tools for stochastic simulation and network analysis in C#, Python and Matlab languages.

Education

2008 – 2011 M.S. *cum laude* in Computer Science, University of Florence, Florence (Italy).

Thesis supervised by Prof. Luigi Brugnano, *Efficient methods for the numerical solution of Hamiltonian problems*. Analysis of the effectiveness of numerical methods for ODEs with respect to the conservation of energy in the case of Hamiltonian systems. Efficient implementation of such techniques using a framework developed in C.

2004 – 2008 B.S. in Computer Science, University of Florence, Florence (Italy).

Thesis supervised by Prof. Luigi Brugnano, *Numerical methods in Linear Algebra with applications to Google's Pagerank*. Study of the *random surfer* model and possible approaches to the computation of the stationary point of the associated Markov chain. Experimental results obtained with Matlab simulations.

Publications

Google Scholar: scholar.google.com/citations?user=Y3ag8YsAAAAJ

2017 L. Stella, A. Themelis, and P. Patrinos, *Forward-backward quasi-Newton methods for nonsmooth optimization problems*, Computational Optimization and Applications, (2017)

2016 P. Latafat, L. Stella, and P. Patrinos, *New primal-dual proximal algorithm for distributed optimization*, in 55th IEEE Conference on Decision and Control (CDC), December 2016, pp. 1959–1964

A. Themelis, L. Stella, and P. Patrinos, *Forward-backward envelope for the sum of two nonconvex functions: Further properties and nonmonotone line-search algorithms*, ArXiv e-prints, (2016)

2014 P. Patrinos, L. Stella, and A. Bemporad, *Douglas-Rachford splitting: Complexity estimates and accelerated variants*, in 53rd IEEE Conference on Decision and Control (CDC), December 2014, pp. 4234–4239

Talks and seminars

Sep. 2016	"A simple and efficient optimization algorithm for nonlinear MPC," 4th European Conference on Computational Optimization (EUCCO 2016), Leuven, Belgium.
Nov. 2015	"Proximal quasi-Newton methods for nonsmooth composite optimization problems," KU Leuven Optimization in Engineering Center (OPTEC), Spa, Belgium.
Jul. 2015	"Accelerated L-BFGS for large scale nonsmooth convex optimization," 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, PA, USA.
Dec. 2014	"Douglas-Rachford splitting: complexity estimates and accelerated variants," 53rd IEEE Conference on Decision and Control (CDC 2014), Los Angeles, CA, USA.

Software projects   GitHub: `github.com/lostella`

Proximal Operators.jl	JULIA package to compute the proximal operator of several functions commonly used in nonsmooth optimization problems. Useful as building block to implement large scale optimization algorithms such as ADMM. Web page: `github.com/kul-forbes/ProximalOperators.jl`
ForBES	MATLAB solver for nonsmooth optimization, contains a library of mathematical functions to formulate problems arising in control, machine learning, image and signal processing. Web page: `kul-forbes.github.io/ForBES`

Programming skills

Proficient	C, MATLAB, JAVA, JULIA, PYTHON, GIT
Familiar	C++, C#, HASKELL, SQL

Languages

English	Native
Italian	Native
German	Elementary