

Lorenzo Stella

Email lorenzostella@gmail.com
Web lostella.github.io
GitHub github.com/lostella

Education

2013 – now	PhD in Computer, Decision and Systems Science, IMT Lucca (Italy), jointly with ESAT – Department of Electrical Engineering, KU Leuven (Belgium). Supervisors: Panos Patrinos (KU Leuven), Alberto Bemporad (IMT Lucca). Algorithms for large-scale nonsmooth optimization problems, with applications to optimal control, distributed optimization, machine learning, image processing, recommender systems.
2008 – 2011	MSc in Computer Science, University of Florence (Italy).
2004 – 2008	BSc in Computer Science, University of Florence (Italy).

Experience

Fall 2015	Teaching assistant, optimization course (by Panos Patrinos), KU Leuven (Belgium).
2011 – 2012	Research Analyst at COSBI, Trento (Italy). Analysis and simulation of stochastic models in systems biology (PK/PD, metabolic, gene regulatory networks). Collaboration with researchers and programmers to develop tools for the stochastic simulation of biological systems (link).

Publications

Google Scholar profile: [link](#)

2017	L. Stella, A. Themelis, and P. Patrinos. Forward-backward quasi-Newton methods for nonsmooth optimization problems. <i>Computational Optimization and Applications</i> , 67(3):443–487, 2017. Online: link L. Stella, A. Themelis, P. Sopasakis, and P. Patrinos. A simple and efficient algorithm for nonlinear model predictive control. Submitted, March 2017 L. Stella, A. Themelis, and P. Patrinos. Newton-type alternating minimization algorithm for convex optimization. Submitted, February 2017
2016	P. Latafat, L. Stella, and P. Patrinos. New primal-dual proximal algorithm for distributed optimization. In <i>55th IEEE Conference on Decision and Control (CDC)</i> , pages 1959–1964, December 2016. Online: link A. Themelis, L. Stella, and P. Patrinos. Forward-backward envelope for the sum of two nonconvex functions: Further properties and nonmonotone line-search algorithms. <i>ArXiv e-prints</i> , June 2016. Online: link
2014	P. Patrinos, L. Stella, and A. Bemporad. Douglas-Rachford splitting: Complexity estimates and accelerated variants. In <i>53rd IEEE Conference on Decision and Control (CDC)</i> , pages 4234–4239, December 2014. Online: link P. Patrinos, L. Stella, and A. Bemporad. Forward-backward truncated Newton methods for convex composite optimization. <i>ArXiv e-prints</i> , February 2014. Online: link

Programming skills

MATLAB	I worked with MATLAB since my BSc and used it on a daily basis during my PhD to implement optimization algorithms and perform numerical simulations.
JULIA	I worked with JULIA since Summer 2016 and used it ever since. I contribute to the package ecosystem, and intend to keep working with JULIA as I generally prefer it over MATLAB.
PYTHON	I am proficient with the language, although it rarely was the main tool in my workflow. I am particularly interested in working with modern numerical and ML frameworks such as TensorFlow, Caffe, Theano.
C	I am fully proficient with the language and often use it to implement efficient routines when this is not possible with high-level languages, like in this case .

Software projects

GitHub profile: [link](#)

Proximal Operators.jl	<p>JULIA package to compute the proximal operator of several functions commonly used in optimization. The purpose is to have a toolbox of efficiently implemented operators, to be used as building blocks for large scale, nonsmooth optimization algorithms such as (fast) proximal gradient methods, ADMM, and primal-dual splitting algorithms.</p> <p>Web page: github.com/kul-forbes/ProximalOperators.jl</p>
ForBES	<p>MATLAB framework to develop solvers for nonsmooth optimization, contains a library of mathematical functions to formulate problems arising in control, machine learning, image and signal processing. Contains novel, efficient, Newton-type algorithms for nonsmooth problems based on my PhD research.</p> <p>Web page: kul-forbes.github.io/ForBES</p>

Languages

Native	English, Italian
Elementary	German