JAVIER SATULOVSKY

javier.satulovsky@gmail.com | Santa Clara, CA | (408) 493-0405 | linkedin.com/satulovsky

Extensive experience in research, algorithms, and ML. Created intellectual property, new commercialized technologies for measurement, and software for user-facing data products. Lifelong learner and creative problem solver.

Relevant areas: Data Analysis, Algorithms, Modeling, Machine Learning, Optimization, Cell Biology, Theoretical Physics, Measurement, Software development.
Relevant Tools: R, Scala, Spark, Python, SQL, Agile, TensorFlow, PyTorch.

Experience

Danaher (Danaher Life Science Digital), *Sr. Staff Data Scientist*, Sept 2021, present

Accelerating Analytics adoption across Danaher's operating companies. Helped deliver 3 models to stakeholders meeting KPIs [Python, TensorFlow, PyTorch, AWS, MLflow, Time series, CRISPR]

Danaher (Intabio acquired by Sciex/Danaher), *Staff Data Scientist*, July 2020 - Sept 2021 (1y 2m)

Algorithmic development for novel measurement instrument to characterize biologics (iCIEF-MS) [Python, FasAPI]

Built microservices and central dashboard to bring visibility and improvements into manufacturing and QC processes [Python, MongoDB, Plotly-Dash, Docker]

Omnicell, *Sr. Data Scientist*, Feb 2019 - June 2020 (1y 5m)

Applied NLP approach to hardware log information to find out where hardware was in a hospital, all without human intervention (company hackathon winner) [Spark, shiny, D3.js].

Ideated, prototyped, and trained machine vision model for novel counting system using sensor fusion, increasing accuracy by 5% compared to single sensor approaches. Customized and trained algorithms for image detection and object counting [TensorFlow, Keras].

Designed k-NN classifier to help infer vendor catalog metadata which was adopted in production [sklearn, Spark].

Established a framework for modeling drug distribution in nursing units using discrete event simulations [r-simmer], leading to insights that were hard to infer from hardware logs alone.

Lumos Labs, *Sr. Data Scientist*, Sept 2016 - Feb 2019 (2y 6m)

Helped create several insights for a brain training product that improved engagement and personalized the premium subscriber experience: Examples: goo.gl/STzj7h - goo.gl/yU7bLG - goo.gl/Y2ueeE - goo.gl/6drmR8 - goo.gl/thwQ2J - goo.gl/uz551M [R, Scala/Spark, ML, NLP, SQL].

Modeled LTV components and segmented users to drive growth (including clustering users by the time series associated to their behavior) [Regression, Classification, Time series analysis, SQL, Spark].

Agilent Technologies - Central Research Labs, *Sr. Research Scientist*, Jul 2007 — Aug 2016 (9y)

Conceptualized and commenced execution of IoT initiative to mine instrumentation data in order to improve manufacturing, R&D workflows, and customer services [node.js, JS, HTML, AWS, Docker, Java].

Created and prototyped technology that became a successful commercial product ('Swarm Tune') for one of the company's two highest profile measurement instruments. Product video: bit.ly/2PCM1PU [C#, C, Evolutionary Optimization, Noisy measurements, Instrumentation].

Applied machine learning for signal processing and machine vision in augmented reality application for improved wet lab productivity reduce human errors [OpenCV, Java, C#, Python, NNs, CNNs, Viola-Jones].

Univ. of Massachusetts Medical School, *Postdoctoral Associate*, Feb 2006 — Jun 2007 (1 yr, 5 mos)

Developed quantitative model of cellular motility plus experimental and custom computational pipeline for automatic extraction of information and scoring of thousands of cell images. Peer review paper describing work has 115 citations [Modeling, Optimization, C++, Python, ITK]

Purdue University, *Postdoctoral Fellow*, May 1997 — May 1999 (2 yrs)

Generalized a Mean-Field Theory of polymers to enable solving time-dependent phenomena, expanding the scope of the theory and opening up a new line of research for the lab. Peer review paper describing formalism has 299 citations [Statistical Mechanics, Algorithms, Image processing].

Relevant Coursework

Deep Learning Specialization - 5 courses by Deeplearning.ai/Coursera, 2018
Text Mining and Analytics - U. Illinois/Coursera, 2017.
Big Data Analysis with Scala and Spark - 3 courses, EPFL/Coursera, 2017.
Scalable Machine Learning - Berkeley/EdX, 2015.
Mining of Massive Datasets - Stanford/Coursera, 2014.
Algorithms: Design and Analysis, Part 1 / Part 2 - Stanford/Coursera, 2013.
Machine Learning - Stanford/Coursera, 2013.

Education

PhD, Molecular Cell Biology, 2006. Washington Univ. in St Louis, MO.
PhD, Theoretical Physics, 1996. Sao Paulo University, SP, Brazil.

Patents - google patents

Automated baseline removal of signal. JE Satulovsky - US Patent 8,645,090.
System and method for performing tandem mass spectrometry analysis. JE Satulovsky - US Patent 8,987,662.
Method for isomer discrimination by tandem MS. JE Satulovsky, MA Bynum, G Staples - US Patent 9,530,633.
Ion mobility mass spectrometry tags for quantitative applications and methods thereof. BP Smart, J Myerson, CD Wenger, JE Satulovsky - US Patent 9,377,468
Data Dependent Acquisition System for Mass Spectrometry and Methods of Use. DM Horn, JE Satulovsky - Patent GB2471155B.

Selected Peer Review Journal Publications - google scholar

Kinetic and thermodynamic control of protein adsorption J Satulovsky, MA Carignano, I Szleifer Proceedings of the National Academy of Sciences 2000, 97 (16), 9037-9041.

Stochastic lattice gas model for a predator-prey system JE Satulovsky, T Tomé Physical Review E 1994, 49 (6), 5073.

Kinetics of protein adsorption and desorption on surfaces with grafted polymers F Fang, J Satulovsky, I Szleifer Biophysical journal 2005, 89 (3), 1516-1533.

Exploring the control circuit of cell migration by mathematical modeling J Satulovsky, R Lui, Y Wang Biophysical journal 94 2008, (9), 3671-3683.

The influence of lateral interactions on the critical behavior of a dimer–monomer surface reaction model J Satulovsky, EV Albano The Journal of chemical physics 1992, 7 (12), 9440-9446.

Lattice Lotka–Volterra models and negative cross-diffusion JE Satulovsky Journal of theoretical biology 1996, 183 (4), 381-389.

Spatial instabilities and local oscillations in a lattice gas Lotka–Volterra model JE Satulovsky, T Tome Journal of Mathematical Biology 1997, 35 (3), 344-358.