

Alessandro Marin, PhD

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[Online resume](#)
[LinkedIn page](#)
[GitHub page](#)

STATEMENT OF QUALIFICATIONS

Qualified by 4+ years as Support Specialist and 7 years of doctoral and post-doctoral academic experience in biophysics and solar energy research. Expertise in programming, data acquisition and data analysis, including machine learning and modeling. I am interested in leveraging my skills for a role in software development or data science/machine learning.

PROFESSIONAL EXPERIENCE

JOB	Research Assistant - Head Engineer	December 2018 – Present
EMPLOYER	University of Oslo	Oslo, Norway
	Extend the functionality of UiO's educational platforms	
TASKS	<ul style="list-style-type: none">• Full stack development of a plugin for Canvas LMS using the LTI standard	
JOB	Support Specialist	May 2014 – August 2018
EMPLOYER	InterSystems Corporation	Cambridge, MA
	Provided technical support for InterSystems' Analytics platform	
TASKS	<ul style="list-style-type: none">• Solved customer issues and requests (about 450), coordinate with clients and developers on any proposed changes• Development of applications using HTML, Javascript, ObjectScript, SQL, MDX• Developed and improved analytical models, architecture, dashboards, and software performance for Business Intelligence• Joined client meetings to troubleshoot issues and coordinate project development	
JOB	Postdoctoral Scientist	September 2011 – June 2013
EMPLOYER	Delft University of Technology	Delft, the Netherlands
	Investigated molecular electronic processes in organic semiconductors	
OUTCOMES	<ul style="list-style-type: none">• Developed a nonlinear superposition model in MATLAB to extract charge yields from spectroscopic data• Implemented LabVIEW software for laser systems using event-driven programming	
JOB	Ph.D. in Biophysics of Photosynthesis	April 2006 – June 2011
EMPLOYER	Vrije Universiteit	Amsterdam, the Netherlands
	Researched the transport of light energy in plant and algal photosynthesis	
OUTCOMES	<ul style="list-style-type: none">• Developed MATLAB software for data processing. Performed model-based analysis of spectroscopic data on high performance servers• Co-developer of the C (LabWindows) software for a laser detector. Set up real-time instrument control and digital data processing at high-repetition rates• Published 6 peer-reviewed publications (4 first author) in academic journals	
PROJECT	Master Thesis in Hearing Research	August 2004 – June 2005
UNIVERSITY	Karolinska Institute	Stockholm, Sweden
	Researched cochlear mechanics	
OUTCOMES	<ul style="list-style-type: none">• Preprocessed movies of the cochlea with wavelet denoising and deconvolution• Invented and developed a MATLAB algorithm that uses optical flow to couple a simulation of cochlear movement to microscopic movies• Published a peer reviewed publication in an academic journal	

EDUCATION

STUDY	PhD in Biophysics of Photosynthesis	April 2006 – April 2012
UNIVERSITY	Vrije Universiteit	Amsterdam, the Netherlands
	Full time research in biophysics of photosynthesis on the EU funded project Harvest	
STUDY	BSc in Physics, MSc in Applied Physics	September 1999 – November 2005
UNIVERSITY	University of Padova	Padova, Italy
	Karolinska Institute	Stockholm, Sweden
	Bachelor and Master in Physics at University of Padova.	
	Master thesis in Biophysics of the cochlea at Karolinska Institutet	
STUDY	Bachelor of Music, Piano	September 2001 – June 2004
INSTITUTION	Conservatory of Music Benedetto Marcello	Venice, Italy
	3 years piano, 1 year composition	

CERTIFICATES

- [Oracle Certified Associate](#): Java SE 8 Programmer
- [MIT Professional Education Program](#): Certificate for the “Data Science: Data to Insights” online course on Data Science and Machine Learning
- [Online courses](#): Certificates (Coursera, Lynda) on programming, machine learning, and network science
- [Online courses](#): Norwegian language certificate: Upper intermediate part 1 - Hyere mellomniv del 1 (B2)

PROGRAMMING LANGUAGES

- Software development: Python, ObjectScript, Java, ShellScript (Bash), LabVIEW, C (LabWindows/CVI)
- Website development: HTML/CSS/Javascript (jQuery, D3, amCharts, Bootstrap), Django, Angular, TypeScript, NodeJS, REST
- Data analysis using MATLAB, Python, R
- Machine learning in Python (pandas, numpy, matplotlib, scikit-learn, gensim, nltk, etc)
- Databases: relational (Caché SQL, PostgreSQL, MySQL and SQLite) and NoSQL (MongoDB)
- Version control software: Git, Perforce

PROGRAMMING PROJECTS

- [Machine Learning Notebooks](#): Jupyter notebooks about Machine Learning projects
- [PyPanda](#): Optimized a method for modeling transcriptional networks in Python
- [PyPuma](#): Wrote a Python application of a computational biology method for miRNA network inference
- [Zero Waste Locator](#): MEAN (MongoDB, Express, Angular CLI, Node.js) app
- [Djangoresume](#): My Django-based online resume
- [Mezzanine-website](#): My Django/Mezzanine-based site
- [DeepSeeButtons](#): Gather and analyze system information from Intersystems’ data platforms
- [Install-Samples-BI](#): Automatically install sample Business Intelligence implementations on InterSystems platforms
- [InterSystems](#): Miscellaneous projects involving InterSystems’ technology
- [Tantrix](#): Implementation in Python of a puzzle game
- [iGrow](#): Webapp plotting a child’s measurements over reference data from WHO

SKILLS

- Machine Learning: regression, classification/clustering, ensemble methods, dimensionality reduction, time series analysis, web scraping, natural language processing (topic analysis), anomaly detection, familiarity with recommendation systems, neural networks
- Professional experience with large-scale code bases (InterSystems Caché)
- Troubleshooting technical issues using the scientific method and problem solving theory
- Teamwork: launched and supported research projects resulting in 7 academic publications
- Business Intelligence Analytics: diagnosing issues on data, BI models, architecture. Recommending optimizations for performance problems, efficient parallel processing of data
- Management responsibilities and teaching: mentored a new hire and BSc and MSc students, who completed their projects on time and to a high standard. Two years teaching assistant in the MATLAB/LabVIEW course Applied Informatics for Medical Students given in Dutch
- Scientific/Technical writing: published 4 first-authored academic publications, as well as 12 technical articles for the Developer Community of InterSystems
- Communication: presented 16 oral talks at international conferences

LANGUAGES

Italian	Native proficiency	Spanish	Limited working proficiency
English	Full professional proficiency	French	Limited working proficiency
Dutch	Full professional proficiency	Norwegian	Limited working proficiency (Høyere mellomnivå)

PUBLICATIONS

- **Marin A**, van Stokkum IH, Novoderezhkin VI, van Grondelle R. Excitation-induced polarization decay in the plant light-harvesting complex LHCII. *Journal of Photochemistry and Photobiology, A: Chemistry*, 2012, 234:91-99. [Link](#)
- **Marin A**, Doust AB, Scholes GD, Wilk KE, Curmi PMG, van Stokkum IHM, van Grondelle R. Flow of excitation energy in the cryptophyte light-harvesting antenna phycocyanin 645. *Biophysical Journal*, 2011, 101:1004-1013. [Link](#)
- Novoderezhkin VI, **Marin A**, van Grondelle R. Intra- and inter-monomeric transfers in the light harvesting LHCII complex: the Redfield-Frster picture. *Physical Chemistry Chemical Physics*, 2011, 13(38):17093-103. [Link](#)
- **Marin A**, Passarini F, van Stokkum IH, Croce R, van Grondelle R. Minor complexes at work: light-harvesting by Carotenoids in the Photosystem II antenna complexes CP24 and CP26. *Biophysical Journal*, 2011, 100(11):2829-2838. [Link](#)
- Gall A, Berera R, Alexandre MTA, Pascal AA, Bordes L, Mendes-Pinto MM, Andrianambinintso S, Stoitchkova KV, **Marin A**, Valkunas L, Horton P, Kennis JTM, van Grondelle R, Ruban A, Robert B. Molecular adaptation of photoprotection: Triplet states in light-harvesting proteins. *Biophysical Journal*, 2011, 101(4):934-942. [Link](#)
- **Marin A**, Passarini F, Croce R, van Grondelle R. The energy transfer pathways in the CP24 and CP26 antenna complexes of higher plant Photosystem II. A comparative study. *Biophysical Journal*, 2010, 99:4056-4065. [Link](#)
- Boutet de Monvel J, **Marin A**, Jacob S, Tomo I, von Tiedemann M, Fridberger A, Ulfendahl M, Steele CR. From cochlear kinematics to cochlear mechanics: matching model to experiments. *Otol Jpn*, 2007, 16(2):76-84. [Link](#)