

Riccardo Sabatini

Scientist, entrepreneur



Profile

Born in 1981 in Cremona, I obtained the bachelor in physics at Università Cattolica del Sacro Cuore in Brescia. After a short internship in the Max-Planck-Institut in Göttingen, I began to work as an entrepreneur for two years, working with private and public companies and developing two patents on high-tech devices. In 2006 I decided to continue my education with a master degree in theoretical physics at Università di Trieste, finished in 2008 "cum laude" and followed by a PhD in theoretical physics at SISSA concluded in 2012. My field of research is focused on new material discovery based on numerical modeling at the atomistic scale, something I do between Switzerland and Italy. I'm an active developer of the Quantum ESPRESSO project, an open-source code for electronic-structure calculations and materials modeling at the nanoscale; winner of 2009 StartCUP FVG competition for the most innovative start-up idea; organizer of TEDxTrieste; co-director at the Master in Complex Actions, business school oriented to young scientists; project manager of FoodCAST, a national research project focus on building quantitative forecasting technologies on commodities markets; mentor and co-founder of The HUB Trieste, a startup accelerator focused on sustainable and highly innovative business ideas; co-director of the Quantum ESPRESSO Foundation, a no-profit activity supporting young researchers around the globe.

Experience

Project manager - 2011 / today

Project manager and research scientist at FoodCAST. Leader of a multidisciplinary research team, from econo-physics to data-mining and neuroscience. Personal focus on data-mining and AI techniques.

Consultancy and entrepreneurial activities - 2004 / today

Strategic business development consultancy for public and private companies such as Illy S.p.a., Eurotech S.p.a., Coop Italia S.p.a., FIAT S.p.a., List S.p.a. Italian Ministry of Agriculture, Government of Lombardia, European Community.

Scientific advisor for several young and innovative startups (The HUB Trieste, 200% Italiano, xDiscovery, SecreWords, Science2Tech). Definition of the deal with VC funds and private investors, advisor of strategic and innovation development.

Entrepreneur and freelance - 2005 / 2006

Development of 2 patents in ICT sector (LegalCam, process and hardware for digital image acquisition with legal value). Prototyping, IP protection and selling of the invention.

Analyst and business development at FCS S.r.l. - 2004 / 2005

Planning and development of highly secure network infrastructures. Planning and development of several mobile projects. Development of data analysis frameworks. Research on embedded technologies.

Education

PhD in Condensed Matter, SISSA, 2013 SISSA

Research activity in nanotechnology and quantum simulations of materials, with a research project on non-covalent interactions, and in particular on Van der Waals interactions in Density-Functional Theory, for which I developed new theoretical and numerical tools. Developer of Quantum ESPRESSO and main developer of the Moka software package, a OO visual molecular modeler for atomistic simulations.

Master in Complex Actions (MCA) - 2011 SISSA

Master of Philosophy in theoretical physics - 2010 SISSA

Advanced school in High Performance and GRID Computing - 2009 ICTP

Master degree cum laude in theoretical physics - 2008 University of Trieste

Student fellowship in nanotechnology - 2004 Georg-August-Universität

Bachelor's degree in theoretical physics - 2003 Catholic University in Brescia

Prizes and other qualifications

FCI awarded as one of the 60 most influential innovators in the North of Italy - 2012

Most innovative entrepreneurial idea in StartCUP FVG competition - 2009

Member of the Board of Directors at the Quantum ESPRESSO Foundation

Scientific advisor at Axelera, the Singularity University Embassy in Italy

Member of the American Physics Society

Selected publications and talks

"Structural evolution of amino acid crystals under stress from a non-empirical density functional", R. Sabatini et al., J Phys Condens Matter. (42) 424209.

"Nonlocal van der Waals density functional made simple and efficient", R. Sabatini, T. Gori and S. de Gironcoli (accepted in Rapid Comm. PRB)

"Phonons in non-local Van der Waals density functional theory", R.Sabatini and S. de Gironcoli (in preparation)

"Stress and Vibrational Properties of non-local Van der Waals exchange-correlation functionals" - Boston, APS March Meeting 2012

"Quantum Espresso, Moka & XML" - Daresbury, First Quixote Meeting 2011

Invited speaker in several other non-technical conferences and panels, including The European House - Ambrosetti Forum, Accento, Confindustria, Friuli Innovazione.

Skills

Problem solving. Quantitative analysis and modeling, from nanotechnologies to social sciences, from quantitative finance to electronic systems. Development of highly innovative technologies, both in the technical and business point of view. Team and project management. Profound passion for global challenges and disruptive innovations.