

## R É S U M É

Scientific, financial and engineering expertise, effectively communicated.  
Interested in solving challenging problems that cross disciplines and borders.

## EXPERIENCE

2012 – PRESENT DESCRIPTION	ABN AMRO Bank N.V. <b>Quantitative Risk Specialist</b>	Amsterdam, Netherlands
	<p>As a quant at the Investment Strategy &amp; Portfolio Expertise group, I work mainly on projects centered around risk/return modeling &amp; scalable analytics for ~100K clients globally:</p> <ul style="list-style-type: none"><li>- developing risk-bandwidth and -budget models for monitoring client portfolios,</li><li>- leading a team of 4 to develop an platform combining performance &amp; risk analysis with reporting,</li><li>- leading a team of 5 to develop a business-intelligence platform for investment products &amp; portfolios.</li></ul> <p>I also work on research projects, such as:</p> <ul style="list-style-type: none"><li>- developing novel risk visualizations to strengthen a risk-aware investment process,</li><li>- assessing risk/return trade-offs between active- and passive management of mutual-funds,</li><li>- analyzing Monte Carlo performance on pricing and risk of structured products.</li></ul>	
2013 DESCRIPTION	Scientific Computing & Modeling N.V. <b>Postdoctoral Researcher – Scientific Programmer</b>	Amsterdam, Netherlands
	<p>Worked on the integration of our molecular-transport code into the commercial ADF/BAND DFT code (scaling up to supercomputer calculations; ADF2013). This included giving tutorials and work on developer documentation and a proposed GUI front-end.</p>	
2008 – 2012 DESCRIPTION	Foundation for Fundamental Research on Matter <b>PhD Researcher – OIO</b>	Utrecht/Delft, Netherlands
	<p>My doctoral research improved models for electronic transport in single-molecule nanostructures, to understand molecular-electronics experiments at the Kavli Institute of Nanoscience in Delft:</p> <ul style="list-style-type: none"><li>- addressing quantum transport, quantum chemistry and parallel algorithm design,</li><li>- with results presented at a number of international conferences &amp; published in the peer-reviewed literature,</li><li>- and released in the commercially available <i>Amsterdam Density Functional</i> quantum-chemistry code.</li></ul> <p>My teaching experience in Delft included designing and teaching a custom graduate-level tutorial, and coaching students in a team-based computational physics course, in collaboration with Michigan State University Physics.</p>	
2006 – 2010 DESCRIPTION	Clear Cincom B.V. <b>Consultant – Radio Network Planner</b>	Delft, Netherlands
	<p>In the field and in the lab, my work covered test design, execution &amp; analysis for:</p> <ul style="list-style-type: none"><li>- the test &amp; validation of the HSL and Hanzelijn high-speed rail lines, and on the annual coverage-tests for the Netherlands' national railway network, and</li><li>- authoring a number of working papers outlining a GSM-R test methodology which was used as a best-practice approach by the company in the Netherlands and Tunisia.</li></ul>	

## EDUCATION

ONGOING	<b>Chartered Financial Analyst</b> , CFA Level III candidate	CFA Institute
SCHOOL	<b>Santa Fe Institute</b>	Santa Fe, New Mexico
2015	Complex Systems Summer School	
SCHOOL	<b>Delft University of Technology (TU Delft)</b> Aerospace Engineering, Applied Physics & Applied Mathematics	Delft, Netherlands
2007 – 2012	PhD in Physics	
2005 – 2007	MS in Applied Mathematics, <i>cum laude</i>	
2004 – 2007	MS in Aerospace Engineering, <i>cum laude</i>	
2003 – 2007	BS in Applied Physics, <i>cum laude</i>	
2000 – 2004	BS in Aerospace Engineering, <i>Sterbeurs</i> scholarship	
SCHOOL	<b>University of Texas (UT Austin)</b> Aerospace Engineering & Center for Space Research	Austin, Texas
FALL 2005	Graduate Research Internship	
SCHOOL	<b>H. Milton Peters College (VWO)</b>	St. Maarten, Netherlands Antilles
1994 – 2000	Class of 2000, <i>valedictorian</i>	

## SPECIALIST BACKGROUND

I am interested in understanding and using complex patterns and hidden structure in dynamical systems. This "red thread" connects the fields I've done research and developed projects in, and makes me an passionate technical and non-technical presenter.

### Recent Highlights

- Designing an integrated market-, credit- and liquidity risk framework for assessing product-based approach to risk in the Asian regulatory regime, in contrast to the typical portfolio-level risk assessment in Europe
- Developed the model for, and major parts of a full transaction-processing, analytics and reporting stack for an "Investment Game" our team organized for charity, mapping the 2014 World Cup to a complete securities market ([Quant at ABN](#))
- Developed a scalable, high-performance, quantum-chemical NEGF transport code ([Physics PhD](#)), which was later integrated into a commercial quantum-chemistry modeling solution ([Postdoc at SCM](#))
- Designed a statistical methodology for validation of GSM-R network designs during field-trials on the high-speed railway networks in the Netherlands and Belgium, later also used in the design of a network in Tunisia ([Consultant Radio Network Planner](#))

### Programming Languages, Codes & Environments

- Experienced with MATLAB, PYTHON and FORTRAN for high-performance computing,
- Experienced with SAS, SQL and R for database programming and statistical/predictive analysis,
- Limited project-based experience with C, C++, JAVA, PERL, VB, VBA, MAPLE and MATHEMATICA.

### Languages & Intercultural

- Native speaker of English and Dutch, conversational in French, Spanish and Portuguese
- ITIM course on intercultural communication (2003), in conjunction with a 3-week study-tour of Japanese & South Korean heavy industries; led to co-authoring a strategy report for the Netherlands Aerospace Group.

### Grants, Honors & Awards

- Netherlands National Computing Facilities Grant on the SARA Supercomputer Cluster
  - Two (4936-hr & 101641-hr) grants for "NEGF+DFT in BAND for Molecular Transport" (2010, 2011)
- University Fund Delft and Prof.dr.ir. H.J. van der Maas Foundation Scholarships for studies abroad (2005)
- Dutch Mathematics A-lympiad – placed second with team representing St. Maarten (2000)

### Affiliations & Interests

- Society for Industrial & Applied Mathematics member.
- Travel, salsa, intercultural communication, negotiation. I am interested in the many ways people relate to each other across cultures, faiths, and the negotiating table, in particular as it concerns constructive conflict-resolution.