

# Edgar G. de Araújo

*“Accept the challenges so that you can feel the exhilaration of victory”*

George S. Patton

I am a self-taught programmer who is driven by challenges and loves to create robust and elegant solutions.

## GOAL

Field **Software engineering**

Motivation I started programming as a hobby when I got my first computer at the age of 15. And I am improving my programming skills ever since with some formal education (during the technical school and university) and a lot of self-studying. I also did various small software developments at the different places that I worked to help myself or other team members to automate some daily tasks.

Finally, during my work at Ghent University, I got the opportunity to start a large software project involving complex algorithms. For the first time I was working in software development for real, in full-time, and I *loved*. This was such a great experience that I've decided to fully embrace my carrier as software engineer.

## EDUCATION

2010 – 2015 **Ph.D. in Materials Science**, *Department of Materials Science and Engineering*, Ghent University, Belgium – <http://www.dmse.ugent.be>.

PH.D. THESIS

title *Generation of Virtual Microstructures of Materials in Three Dimensions*

description Development of software for analysis and generation of computer representation of microstructures in three dimensions from statistical parameters.

2000 – 2007 **M.Sc. in Metallurgical Engineering**, *Department of Metallurgical Engineering and Materials*, Polytechnic School of University of São Paulo, Brazil – <http://www.pmt.usp.br>.

1995 – 1998 **Electronics Technician**, *Federal Technical School of São Paulo*, Brazil – <http://www.ifsp.edu.br>.

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## EMPLOYMENT HISTORY

- 2015 – now **Software Engineer**, *Silk, Amsterdam - The Netherlands*, [www.silk.co](http://www.silk.co).
- Wrote most of the server code for the GoogleSheet synchronization
  - Wrote the server code integrating import.io into Silk
  - Wrote the server code for exporting data as CSV
  - Code refactoring in the server code
  - Bug fixing in the server code
- 2008 – 2015 **Materials Science Researcher**, *Ghent University, Ghent - Belgium*, [www.ugent.be](http://www.ugent.be).
- Development of software for prior austenite phase reconstruction
  - Development of 3D microstructure virtual generator and analysis tools
  - Modeling of magnetic properties in electrical steels
  - Teaching assistance of two Bachelor's and three Master's courses
- 2007 – 2008 **Application Engineer**, *Magma Engenharia do Brasil, São Paulo - Brazil*, [www.magma-soft.com.br](http://www.magma-soft.com.br).
- Development of foundry projects using the numeric simulation software
  - Customer relationship management
  - Training customers to use the simulation software
  - Teaching basic concepts of metallurgy/foundry to small groups of customers
- 2005 – 2007 **Scientific Researcher**, *Instituto de Pesquisas Tecnológicas, São Paulo - Brazil*, [www.ipt.br/EN](http://www.ipt.br/EN).
- Texture control during heat treatment of electrical steels
  - Study of recrystallization mechanism during heat treatment of low carbon steel
- 2005 – 2005 **Summer internship**, *Tenaris Confab (Socotherm Brazil), Pindamonhangaba - Brazil*, Pipeline manufacturer, [www.tenaris.com/tenarisconfab](http://www.tenaris.com/tenarisconfab).
- Process and quality control of the production line (pipe coating)
  - Internal quality reports
- 2003 – 2004 **Internship**, *Estação Ciência, São Paulo - Brazil*, Museum of science (University of São Paulo), [www.eciencia.usp.br](http://www.eciencia.usp.br).
- Development of didactic devices used in the exposition
  - Management of preventive and corrective maintenance of devices
- 1998 – 1999 **Electronics Technician**, *Gradiente Eletrônica S.A., São Paulo - Brazil*, Audio and video manufacturer, [www.gradiente.com.br](http://www.gradiente.com.br).
- Development of the amplifier stage on audio devices
  - Test and homologation of electronic components and products

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## OTHER ACTIVITIES

2004 **Short-lived start-up**

I had to skip one semester in the university because of an accident during my internship at Museum of Science. I took the opportunity to develop, produce and commercialize an micro-controlled conversion kit that allowed benzine engines in passenger's cars to use ethanol. A partnership with a local garage was established to commercialize and install the product. It came to an end after a disagreement between my partner and me about the selling strategies and because I had to resume my studies at the university.

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## LANGUAGES

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|------------|------------------------------|
| Portuguese | Native Language              |
| English    | Fluent, iBT TOFEL (Dec 2007) |
| Spanish    | Advanced, self-learning      |
| Dutch      | Basic, PCVO (Third level)    |

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## PROGRAMMING

### LANGUAGES AND TOOLS

Functional	Haskell
Procedural	C, Python
OO	Java
Others	assembler, bash, MatLab, $\LaTeX$ and git
OS	Linux and MacOS

### DEVELOPED SOFTWARE

Construo	Software for reconstruction of the prior austenitic phase (only present at elevated temperatures) in steels. Some innovative solutions were introduced in this work: <ul style="list-style-type: none"><li>• Fully automated orientation relationship calculation</li><li>• Noise tolerant reconstruction using Markov clustering algorithm</li></ul>
Virmat	It is a platform for 2D/3D microstructure analysis, generation and visualization. It was written from scratch in Haskell (about 10k lines of code) and includes some of the following features: <ul style="list-style-type: none"><li>• Generation of 2D/3D microstructures with arbitrary grain size and orientation distributions</li><li>• Smooth surface representation using subdivision surfaces</li><li>• Texture and morphological analysis of measured microstructures in 2D/3D</li></ul>

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## PUBLICATIONS (Most relevant)

**Fully automated orientation relationship calculation and prior austenite reconstruction by random walk clustering**, E. Gomes & L. A. I. Kestens, Materials Science and Engineering, Vol. 82 – No. 1 (2015).

**Evolution of the Microstructural Surface Characteristics During Annealing**, E. Gomes, K. Verbeken, J. Gautam, & L. A. I. Kestens, Materials Science & Engineering: A, Vol. 561 (2013) pp. 312 - 316.

**Virtual 3D Microstructures with Specified Characteristics of State Variable Distributions**, E. Gomes, K. Verbeken and L. A. I. Kestens, Materials Science Forum, Vol. 702-703 (2012) pp. 540 - 543.

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## CONFERENCES AND SYMPOSIUMS (Most relevant)

Oral presentation	<i>Fully automated orientation relationship calculation and prior austenite reconstruction by random walk clustering</i> , The 17 <sup>th</sup> International Conference on the Textures of Materials – ICOTOM 17, Dresden – Germany, (August 24-29, 2014)
Oral presentation	<i>Virtual 3D Microstructures with Specified Characteristics of State Variable Distributions</i> , The 16 <sup>th</sup> International Conference on the Textures of Materials – ICOTOM 16, Bombay – India, (December 12-17, 2011)
Poster	<i>Fitting Subdivision Surfaces on Three Dimensional EBSD Maps</i> , The 2 <sup>nd</sup> International Conference on 3D Materials Science – June 29 - July 2, 2014 – Annecy, France
Poster	<i>Digital Representation of 3D Grain Boundaries using subdivision surfaces</i> , The 1 <sup>st</sup> International Conference on 3D Materials Science – July 8-12, 2012 – Seven Springs, Pennsylvania, USA

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## UPDATED

January 25, 2015