Fabio Spinazzè

Last Updated on 22nd October 2019

About me

Moved by an insatiable curiosity and strong eclectic passions, I take every occasion to learn from others and test what I think I know.

My current job consists in the electromagnetic design and validation of electric machines, in particular high performance synchronous motors that move hybrid or electric vehicles.
I was motivated to apply for this job soon after my university studies because of the high level of competition in the automotive sector and my interests in the design process of such clever and efficient machines.
The development of more sustainable and reliable means of transportation is a key factor in the current historical frame. Since the technology of electric vehicles is not mature yet I think this is the most exciting moment to play an active part in this industry.

I like to work in team with competent people as well as programming computers, both are essential when tough problems need to be solved. I've learned to work under pressure and with the little time the automotive sector allows.

Languages

Italian (Mothertongue),
English (CAEL 1, "First")
German (Basic A2)

Programming lang.

Python, Matlab,
Mathematica, LUA

Software I use

MS Office, Ansys Maxwell,
Matlab/Simulink, Autocad
(any 2D CAD), Mathematica,
Motor-CAD, PLECS, Pspice,
Cinema4D, Rhinoceros,
Adobe Creative Cloud

miscellaneous

Car owner (driving licence B),
Nerd/computer guy,
photographer, trekker,
astronomer, single, young
and thirsty

Professional Experience

May 2017 - present **Eldor Corporation S.P.A.** Via Don Paolo Berra, 18 - 22030 Orsenigo (CO)

Electromagnetic development engineer

R&D electrical machines for Hybrid and Electric Vehicles. Electromagnetic design, optimization, multiphysics FEM simulations, scripting, testing.

Skills refined:

- Customer specifications analysis and selection of the most suitable type of motor eg. IM, SPM, IPM, WRSM, FSSM;
- Experience with the most used cooling systems: forced air, water jacket, oil dripping/spray;
- Stator winding design: round wire, rectangular or Hairpin;
- 2D/3D FEM transient and magneto/electrostatic analyses with ANSYS Maxwell;
- Geometry optimization with the help of custom-made python and Matlab scripts (multiobjective opt, thousands of geometries);
- Short circuit analysis, three-phase perfect and two-phase, impact on the inverter currents and demagnetization;
- Thermal analysis with MotorCad and complete characterization of peak and continuous performance, road cycles simulations;
- Electrostatics: slot and winding heads insulation calculations for HV motors;
- Documentation: Writing of technical reports on the analysis done and presentation of the results to the customers, management of the shared documentation, bill of materials; international standards analysis;
- Writing of the measurements list and procedure for prototype testing and subsequent tuning of the simulations parameters;
- Research topics ranges over more accurate and fast simulations, patents and new technologies/industrial processes analysis, new slot insulation materials, fractional slot windings;
- Customer requirements management with DOORS;

June - Sep. 2010 **Zecchin Arredamenti** Via Cavour, 22 - 31029 Vittorio Veneto (TV)

Internship at an architecture studio

During this months I was in charge of the Architectural 3D modeling and rendering of interiors. My supervisor needed a new way to show his costumers the interior design proposals in a photo-realistic manner.

Skills refined:

- Professional Graphics/3D modeling software such as: Rhinoceros, Cinema4D, Photoshop, Illustrator, 3D Studio
- measurements surveys needed to build a virtual copy of the architectures
- training of other employees on the fundamentals of 3D modeling and rendering

Publications

18 Oct. 2017 **Article and conference poster** ICIS2017 - International Conference on Ion Sources, Geneve

Child-Langmuir-limited current in the negative ion source NIO1

Written with the master thesis supervisor, it presents the theoretical concept and some experimental development of the topic analyzed in the previous work. This publication is about the ITER experimental fusion power plant under construction in France.

Formal Education

sep2014 - Feb2017 **Master Degree in Electrical Engineering** Dep. of Industrial Engineering, University of Padua

Final Grade: 110/110 (full marks)

Main attended courses:

- Electrical machine design
- Electric drives control and automation
- Analog electronics design

2006 - 2011 **High school diploma** B. Munari Art school, Vittorio Veneto (TV)

Final Grade: 89/100

Main attended courses:

- Industrial design
- Wood art
- Jeweler's and metal art

Interests and hobbies

Digital Photography: Public events and ceremonies, low-light, silent shooting, no-flash, portraits, landscapes.

Postproduction: photo-editing, big panorama (Gigapixels) super-resolution, stacking, prints, Quicktime VR (interactive virtual reality).

Power electronics: I have produced a number of driver for small electric motors and induction forges up to 1 kW of power. I've built some high-voltage (up to 35 kV) devices for demonstration purposes (radio transmission, wireless lighting).

Astronomy: I'm member of the group of amateur astronomers of Como where I help with the scientific publication and outreach, also I love taking pictures of the night sky with or without telescopes (link).

University College: During my university studies I lived at the prestigious "Collegio Gregorianum", where a good number of friendship started and survived despite long geographic distances. During the master thesis I worked there as secretary.

Cultural exchange: in 2009 the high school joined a cultural exchange program with the Royal Academy of Art in Den Haag (Nederlands). I lived one week by a local family and I followed wherever my flemish friend went. Having the chance of understand another culture at such a young age became a cornerstone of my personality.

Sports: Judo, Mountain climbing, swimming, running, canoeing.