**Yaman Zbede**

PhD - Motor Drives and Simulation Engineer

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| A bright and articulate Engineer with a strong academic record and industrial experience in the field of motor control and a keen interest in developing a career within the industry. Quickly grasps new ideas and concepts and demonstrates a sound understanding of engineering processes and system assembly. Dedicated and ambitious with an innovative and analytical approach to problem solving; consistently recognized for effective communication, strong organizational skills and ability to work in both team and self-directed environments. |

**Education**

**May 2017 PhD Motor Drives Eng,** Newcastle University, Newcastle Upon Tyne, UK

**Thesis:** Model Predictive MRAS Estimators for Sensorless Induction Motor Drives.

**Supervisors:** Dr Dave Atkinson and Dr Shady Gadoue.

**Brief Synopsis of the Research:** The research presents a novel predictive MRAS speed estimator for sensorless induction motor drives applications. Within the proposed estimator, the rotor position is calculated by using a search-based optimization algorithm.

**Relevant Research Skills:**

General skills in research project management and data analysis. Specific expertise in:

* Computing Skills:

Programming Languages: C++, Matlab, Matlab/Simulink, LabVIEW.

Applications: Microsoft Office Suite, Internet Explorer.

* Technical Skills:

Good Knowledge of motor drive systems and particularly sensorless induction motor drives.

Good Knowledge of power converters analysis, design and implementation.

Good knowledge in machine modelling using Matlab/Simulink.

Good knowledge in embedded systems programming using C++.

* Other Skills:

Time management: I met without fail many deadlines in my PhD. I have extensive experience of juggling different tasks and bringing these to a successful conclusion.

Verbal and Written Communication skills: Writing and presenting reports. **Student representative**, 2013-2014 and the **Student Liaison** in the annual research conference committee, Newcastle University, 2013-2014.

**Sep 2012 MSc Electrical Power Eng,** Newcastle University, Newcastle Upon Tyne, UK.

**Dissertation:** Fuzzy Sliding mode controllers for Induction machines drive.

**Modules:** Control & Machine Drive; Power Electronic; Machines Design; Power Distribution; DC & AC Machines.

**Sep 2009 BSc in Electrical and Electronic Eng,** Aleppo University, Aleppo, Syria.

**Dissertation:** Computer Aided design of electrical drive systems.

**Automotive Experience**

**Simulation and control Engineer - Automotive February 2019 – Present**

**Dyson, Hullavington, UK**

Responsibility for objective Ride simulation to develop and tune vehicle performance to achieve

attribute targets, working within the vehicle dynamics team on a new passenger vehicle platform.

Accountabilities:

* Build & maintain up to date and correlated powertrain models (**Motor**, **inverter**, **battery**, and **Driveline**
* Carry out control system integration into vehicle dynamics models through Simulink
* **Develop Test scenarios and link them with the relevant requirements**
* Presentation of results and analysis
* Support Driving Simulator activities

**Relevant Software Skills:**

* Coding**: Matlab language**
* Modelling: **Matlab Simulink**, **Simscape** and **Multibody**
* Developing tests: **Matlab Test Manager**
* Team work: **Simulink Projects**
* Version control: **Sourcetree**

**Research Associate – Automotive 2016 –2018**

**Manchester University, Manchester, UK**

Development and implementation a control strategy for a multi-phase integrated permanent magnet machine. This includes:

* Develop full circuit simulation of the machine, inverter and controller to control the machine over a wide speed range.
* Implement the control on the target hardware, including functionality to support test requirements of academic partners.
* Extend the control for thermal optimization and speed-sensorless operation.
* Liaise with colleagues in the university, external university collaborators and external suppliers.

The project is an awarded EPSRC grant on next-generation in integrated drives, which is a cross‑theme project for the center of power electronics.

**Relevant Software Skills:**

* Coding**: C++, Matlab language**
* Modelling: **Matlab Simulink**
* User Interface: **Labview**

**Engineering and Teaching Experience**

**Motor Drives Engineer 2018 – 2019**

**Dyson, Malmesbury, UK**

* Develop novel high performance electric motor topologies and advanced control systems.
* Develop and use dynamic system simulation (Matlab/Simulink) to:
  + Accurately model motor performance
  + Develop the motor controls to meet the target performance
* Test & validate new motor drive designs
* Work with other Dyson motor drives, power electronics, software and mechanical engineers

from Malmesbury and Singapore to ensure that the product performance, reliability and cost

expectations are met, all within the planned timeline of the project.

**Lab Demonstrator 2013 – 2016**

**Newcastle University, Newcastle upon Tyne,UK**

* Regular supervision of practicals for undergraduate students. Assisting with the delivery of undergraduate laboratory practical course helping and guiding students to build electronic circuits and analyse results circuits manufacturing and programming.
* Marking of stage lab reports via Turnitin software.

**Teaching Experience 2010 –2011**

**Aleppo University, Aleppo, Syria**

* Delivering lecture sessions for undergraduate students for course in electrical motor drives, Computer aided design of electrical drive systems, industrial automation and micro corollas and processors.
* Organisation and delivery of tutorial sessions, examination invigilation, course work and Setting and marking of examinations
* Supporting students in academic advisory role.

**Graduate Engineer 2009 –2011**

**Al-Rawda Industrial Company, Syria**

* Designing PCB circuits by using both *EAGLE* and *Proteus Design Suite* designing softwares.
* Programing microcontrollers by using both assembly and C++ programming languages.

Maintaining the faulty circuits manufactured by the company

**Publications**

* Y. Zbede and J. Apsley, "***Field weakening control of a PM vehicle drive***," in The Journal of Engineering, vol. 2019, no. 17, pp. 3510-3515, 6 2019.
* Y. B. Zbede, S. M. Gadoue, and D. J. Atkinson, "***Model Predictive MRAS Estimator for Sensorless Induction Motor Drives***," Industrial Electronics, IEEE Transactions on, vol. PP, pp. 1-1, 2016.
* Y. Zbede, S. M. Gadoue, D. J. Atkinson and M. A. Elgendy, "***Predictive sensorless control of induction motor drives***," in Industrial Technology (ICIT), 2015 IEEE International Conference on , vol., no., pp.2339-2344, 17-19 March 2015.
* X. Zhang, A. Bodrov, J. Apsley, A. Semjonovs and Y. Zbede, "***Speed Sensorless Control of a Surface-mounted Permanent Magnet Drive***," 2019 10th International Conference on Power Electronics and ECCE Asia (ICPE 2019 - ECCE Asia), Busan, Korea (South), 2019, pp. 2853-2859.
* A. M. Mnider, D. J. Atkinson, M. Dahidah, Y. B. Zbede and M. Armstrong, "***A programmable cascaded LPF based PLL scheme for single-phase grid-connected inverters***," 2016 7th International Renewable Energy Congress (IREC), Hammamet, 2016, pp. 1-6.

**Achievements and Academic Awards**

* Best graduate MSc student certificate, Newcastle University, UK, 2012, average 88.4%.
* Best graduate BSc student certificate, Aleppo University, Syria, 2010, average 81.67%.
* An MSc and PhD scholarship fund award, Ministry of higher education, Syria 2011.
* First place for “**Best Paper and Presentation**” in the Electrical Power group at the School of Electrical and Electronic Engineering Annual Research Conference ARC 2014.
* Second place for “**Best Presentation**” in the Electrical Power group at the School of Electrical and Electronic Engineering Annual Research Conference ARC 2015.
* Second place for “**Best Poster**” in the Electrical Power group at the School of Electrical and Electronic Engineering Annual Research Conference ARC 2013.

**Other Technical Experience**

Software Programming: C++, Visual Basic, Matlab, Labview

Machine Programming: PLC (Siemens)

PCB Design: EAGLE *and* Proteus Design Suite

**Trainings**

MATLAB fundamentals training – 2018

MATLAB Simulink for system and algorithm modelling -2018

MATLAB programming techniques - 2019

MATLAB signal processing - 2019

MS Excel fundamentals training – 2018

MS Excel intermediate training - 2018