



# ARDA BULU

## Experience and Membership

### **Informatics Institute, Istanbul Technical University**

SP4CING(Signal Processing and Artificial Intelligence Research Group)

### **Electrical Engineers Chamber, Turkey (EMO)**

Member (46045)

### **Engineers Australia Skill Assessment**

Competency Demonstration Report

### **Istinye University, Vocational School, Computer Programming**

(02.2018 - 11.2021)

Head of Computer Programming

### **Master of Engineering Student Lab Assistant**

### **Royal Melbourne Institute of Technology University, Australia**

(02.2012- 02.2014)

Student Lab

I studied dynamics and designed the Resonant Controller of a DC motor, system identification and designing PI, PID controllers for a Gantry Robot.

I constructed and simulated an Oscillator, using 74XXX logic elements family and RC analogue filter, which is driven by digital signal stimulus (1-bit).

I conducted parametric, performance, and temperature analysis of a BJT CE Amplifier, along with the worst-case scenario and Monte Carlo analysis on a BJT Transresistance Amplifier.

I performed Analog Behavioral Modelling of an Op-Amp based amplifier (LM324). I investigated the time domain response of current regulated H-Bridge (Open Loop Three Level Modulation, Closed-Loop PI, PI with Feed-Forward Back-Emf Compensation, Closed Loop Proportional and Resonant) power electronic converters.

I designed a specified flyback converter and simulated it to adjust the performance of its components. This is followed with a physical check of the virtually designed flyback converter to investigate the practical second order effects, such as flyback transformer leakage inductance, semiconductor device losses and semiconductor off-state capacitance.

I examined the comparison of simulated transient performance of the 20-hp 220V 60Hz 4pole squirrel cage Induction Motor Drive simulated with closed-loop scalar control and closed-loop vector control, and the inertia of the drive system, coupled separately excited DC motor and squirrel cage induction motor, is experimentally determined.

### **Designing an Electric Speedboat Consultant**

### **Delft University of Technology, Industrial Design Engineering**

### **Integrated Product Design**

(05.2016 - 11.2016)

I was consulting on this project to contribute to replacing combustion engines with their environmentally friendly electrical equivalents in support of marine life. Being inspired by the Tesla strategy, the mission of this project is to conceptually explore how electric boats can be the alternative option. The challenge is to define the aesthetics of the embodiment so that the technology within is desired.

**Biomass Generator Consultant**  
**National Corporation for Forestry Research and Development cooperated with the**  
**Professional Association Vichadense Agroforestry (CONIF & AGAF, for theirs**  
**acronym in Spanish, respectively)**

(02.2015 - 07.2015)

I am assisting to develop a nation made biomass generator inspired by *Power Pallet* to operate in the remote farms which are not connected to the grid, Vichadense, of Colombia. The proposal was prepared by the collective group in cooperation with CONIF(Corporación Nacional de Investigación y Fomento Forestal), AGAF(Asociación Gremial Agroforestal Vichadense) and volunteer professionals including myself.

**Mathematics and Science Volunteer Trainer**  
**Educational Volunteers Foundation of Turkey (TEGV, for its acronym in Turkish)**

(11.2000 - 08.2008)

I worked along with a volunteer team to mentor children under inadequate social and economic conditions, with the aim of not only instructing them about fundamentals of mathematics but also stimulating enthusiasm towards positive sciences at early ages.

## Computer Skills

Linux, C, Python, MPI, OpenMP, MATLAB, Power World, P-Spice, PSIM

## Education

**Institute of Informatics, Istanbul Technical University, Maslak, Istanbul, Turkey**

(08.2018 - Current)

Computational Science and Engineering (PhD Candidate)

*Research Interests*

*Continual Learning, Image Processing, Sustainable Building*

**Royal Melbourne Institute of Technology University, CBD, Melbourne, Australia**

(02.2012 - 02.2014)

Master of Engineering (Electrical Engineering)

**La Trobe University, Bundoora, Melbourne, Australia**

(03.2011 - 08.2011)

Academic English (Certificate Level 5A)

**Istanbul Technical University**

(08.1999 - 08.2008)

Bachelor of Electrical Engineering

## References

**Prof. Dr. Behçet Uğur Töreyn** (İTÜ, PhD supervisor)  
Informatics Institute  
Assoc. Manager

**Dr. Gülcihan Özdemir** (İTÜ, PhD co-supervisor)  
Informatics Institute  
Academician