Ivan Abraham

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
PhD in Electrical & Computer Engineering
Preliminary exam - Spring 2020
Aug 2021 | GPA: 3.86

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
MS in Mechanical Engineering
Dec 2017 | GPA: 3.91

TEXAS A&M UNIVERSITY AT QATAR
BS in Mechanical Engineering
Minor in Mathematics
May 2014 | GPA: 3.94

COURSEWORK

UNDERGRADUATE

Mechanics of Materials
Materials in Design
Materials & Mfg. Selection
Thermofliud Analysis & Design
Dynamics & Vibrations
Fourier Series Wavelet Analysis
Dynamical Systems & Controls
Princ. of Bldg. Energy Analysis

GRADUATE

Linear System Theory & Design
Introduction to Robotics & Dynamics
Nonlinear & Adaptive Control
Nonlinear Analysis
Optimal Control Theory
Geometric Control Theory
Stochastic Control

TEACHING

(Lab Instruc. & Teaching Asst)
Engineering Materials
Introduction to Electronics
Linear Systems Theory & Design
Control Systems
Nonlinear Systems

SOFTWARE SKILLS

Python • Matlab • LaTeX • Simulink
SolidWorks • Wolfram Mathematica •
LabView • C & C++
Linux Systems • HTML/CSS
ANSYS Fluent • FE Methods

WORK EXPERIENCE

UNIV. OF ILLINOIS - USA | Teaching & Research Assistant
Sept 2015 – Present | Champaign, IL

- Involved in creating analysis techniques for high dimensional biophysical data (fMRI/EMG)
  - to infer brain dynamics between different brain regions and
  - to create models of mechanisms that map between EMG data and forces generated by muscle movements
- Studying use of classification & ML tools to generate interpretable features from data

TEXAS A&M - QATAR | Temporary Research Assistant
Mar 2015 – Jul 2015 | Doha, QA

- Worked on design, fabrication & assembly of gas based super plastic forming machine to shape metal at elevated temperatures
- Involved in control design and mechanical assembly of the equipment
- Generated Project Safety Analysis reports & documentation

CARNEGIE MELLON - QATAR | Temporary Research Associate
Jan 2015 – Mar 2015 | Doha, QA

- Installed, set-up and commissioned processor simulation package from MIT (Graphite) on network file system based prototype cluster
- Tested & benchmarked pilot cluster with four nodes, resulting in creation of commissioning manual for future clusters & identification of bugs
- Made recommendations for performance specifications of future cluster nodes

SUPREME COMMITTEE FOR DELIVERY & LEGACY | Intern
Jul 2014 – Aug 2014 | Doha, QA

- Researched under program consultant (CH2MHILL) to ascertain carbon offset initiatives towards carbon neutral FIFA 2022
- Applied GHG accounting protocols & principles to preliminary analysis of suitable offset projects & made recommendations regarding possible industry partnerships

CHIYODA ALMANA ENGINEERING LLC | Mechanical Intern
Jun 2013 – Jul 2013 | Doha, QA

AWARDS

Spring 2014	TAMUQ	Science Faculty Student of the Year
2012 - 2014	Qatar Foundation	Full Academic Scholarship
2011 - 2013	TAMUQ	Dean's Honor Roll

PUBLICATIONS & PATENTS

Dissociating tinnitus patients from healthy controls using resting-state cyclicity analysis & clustering. Benjamin J. Zimmerman, **Ivan Abraham**, Sara A. Schmidt, Yuliy Baryshnikov, and Fatima T. Husain. Network Neuroscience 2019 3:1, 67-89

Comparing cyclicity analysis with pre-established functional connectivity methods to identify subject groups using resting state fMRI. Somayeh Shahsavarani, **Ivan T. Abraham**, Benjamin Z. Zimmerman, Yuliy M. Baryshnikov, Fatima T. Husain. Frontiers in Computational Neuroscience 2020, Vol. 13

Automated, Objective Method of Assessing Tinnitus Condition. Fatima T. Husain, Yuliy Baryshnikov, Benjamin J. Zimmerman, **Ivan T. Abraham.** US Patent Application No. 16/196587. Publication No. 20190223786 A1 (published 07/25/2019).