

# CURRICULUM VITAE

Benson-Karhi Diamanta, Ph.D.

Updated: 2021

## Personal

**Born:** Beer-Sheva, Israel 13.3.1972

**Marital Status:** Married + 3

## Professional Education

- 1996          B.Sc. Industrial Engineering and Management, Ben-Gurion University of the Negev, Beer-Sheva, Israel
- 2001          M.Sc. Industrial Engineering and Management, Ben-Gurion University of the Negev, Beer-Sheva, Israel
- 2007          Ph.D. Industrial Engineering and Management, Ben-Gurion University of the Negev, Beer-Sheva, Israel

## Academic Appointments

- 2006-2010      Lecturer, Sapir Academic College
- 2008 - 2009      Visiting Lecturer, The Open University of Israel
- 2010-2017      Lecturer, The Open University of Israel
- 2018-present    Senior Lecture, The Open University of Israel

## Offices in Academic Administration

- 2006-2009      Member, Industrial Management Dept. Teaching Committee, Sapir Academic College
- 2008-2011      Member, Engineering subcommittee, The Open University

- 2008-present Member, Social Sciences, Management and Economics and Mathematics and Computer Science subcommittees, The Open University
- 2008-present Member, The Open University Faculty Council
- 2013-present Member, Study Programs Approval Committee, The Open University
- 2014-2018 Member, Committee for Accreditation of Prior Studies, The Open University
- 2014-present Head of the Industrial Engineering and Management Program, The Open University

## **Scholarly Positions and other Academic Activities**

### Membership in Professional Societies:

- ISQ – The Israel Society for Quality
- ENBIS – European Network for Business and Industrial Statistics
- ISA – the Israeli Statistical Association
- Is-ENBIS – the Israeli group Business and Industrial Statistics
- Samuel Neaman Institute for National Policy Research
- Research Center for Innovation in Learning Technologies – the Open University

- 2001-2002 Supervisor of the new Intel advanced lab, IEM Dept. Ben-Gurion University
- 2005 Certification for BasicMOST Applicator, H. B. Maynard and Company, Inc. Pittsburgh, Pennsylvania.
- 2006-2009 Representing the Industrial Management Dept. in the Final Projects Unit, Sapir Academic College

- 2011-2013 Member, the research committee, Research Center for Innovation in Learning Technologies, The Open University
- 2011-2020 Reviewing manuscripts submitted to the following peer-reviewed journals:  
IEEE Transactions on Instrumentation and Measurement; Circuits, Systems, and Signal Processing; IEEE Transactions on Semiconductor Manufacturing;
- 2012-2013 Member, special committee assigned to examining the use of virtual labs in the Open University
- 2018 Member, Advisory Committee, the third national Hackathon in Industrial Engineering and Management
- 2019 Member, Advisory Committee, the fourth national Hackathon in Industrial Engineering and Management
- 2020 Member, Professional Committee, Promotion to Senior Lecture, The Academic College of Tel Aviv-Yaffo
- 2020 Member, Search Committee, Senior Faculty Member in Physics, Department of Natural and Life Sciences, the Open University

#### Membership in Referee Committees

- 2011 M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Solving a Mixture Distribution Problem via Mixture Linear Regression – A Comparison Study of Two Approaches"
- 2015 M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Robust and Optimal Parameter Design to a process with one or more Quality Characteristic in order to maximize the process yield"
- 2015 M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion

- University, "Sparse representation methods and their application to statistical model selection"
- 2016 M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "2D Laplace Inversion of Low Resolution NMR Relaxation Data"
- 2016 Ph.D. Proposal, Industrial Engineering and Management, Ben-Gurion University, "Development of a new approach for product and process design and its transfer to production in the chemical industry"
- 2020 M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Improving Nonconformity Responsibility Decision: A Semi-Automated Model Based On Machine Learning"
- 2008-2020 The annual undergraduate final-projects conference, Ben-Gurion University

### **Participation in Scientific Conferences**

- 2002 12<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Technological Forecasting using Inverse Normalizing Transformations*
- 2004 13<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Applying RMM for Empirical Modeling in Chemical Engineering*
- 2005 ICCMSE: International Computational Methods in Sciences and Engineering, Loutraki, Korinthos, Greece, *Applying Response Modeling Methodology to Model Temperature-Dependency of Vapor Pressure*
- 2006 14<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Variance Estimation of a Normal Process with Significant Round-off Errors*
- 2006 14<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Empirical Modeling in Engineering: an Example of using RMM for Empirical Modeling in Chemical Engineering*
- 2007 AIChE: American Institute of Chemical Engineering, Salt Lake City, Utah, *Prediction of Temperature-Dependent Properties by Correlations Based on Similarity of Molecular Structures*

- 2009 4<sup>th</sup> Industrial Engineering and Management Research Conference, Maalot, Israel, *Process and Product Design: Empirical Modeling and Prediction of Temperature-Dependent Properties of Pure Compounds*
- 2010 16<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Process and Product Design: Empirical Modeling and Prediction of Temperature-Dependent Properties of Pure Compounds*
- 2010 The third isENBIS Conference, Raanana, Israel, *Forecasting S-Shaped Market Diffusion Processes of New Products via Response Modeling Methodology (RMM)*
- 2010 Workshop: Measurement for Quality Improvement, Raanana, Israel, *Estimation of a Normal Process Variance from Measurements with Large Round-Off Errors*
- 2011 The 4<sup>th</sup> International Conference on Manufacturing, Quality and Production Systems (MEQAPS'2011), Barcelona, Spain, *Estimation of Normal Process Variance from Measurements with Large Round-Off Errors*
- 2011 The 4<sup>th</sup> International Conference on Manufacturing, Quality and Production Systems (MEQAPS'2011), Barcelona, Spain, **Chair** of the Quality Assurance and Production Systems session.
- 2011 Workshop: New directions in Quality Management, Raanana, Israel, *Monitoring Fetal Growth by customized fetal growth curves*
- 2012 17<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Monitoring fetal growth via customized growth curves*
- 2012 5<sup>th</sup> Galilee Quality Conference, Carmiel, Israel, *SPC-based Control Scheme to Monitor Fetal Growth*
- 2012 5<sup>th</sup> Galilee Quality Conference, Carmiel, Israel, *Estimation of Normal Process Variance from Measurements with Large Round-Off Errors*
- 2012 22<sup>th</sup> World Congress on Ultrasound in Obstetrics and Gynecology (ISUOG 2012), Copenhagen, Denmark, *Monitoring fetal growth via customized dynamically-updated growth model.*
- 2012 Workshop: Lessons and trends in Quality Management, Raanana, Israel,

*SPC in Healthcare: the example of Customized Fetal Growth Modeling and Monitoring*

- 2013 6<sup>th</sup> Industrial Engineering and Management Research Conference, Maale Hachamisha, Israel, *Modeling and Monitoring Fetal Growth – SPC Approach*
- 2013 ENBIS Spring Meeting 2013, Measurement systems and process improvement: Towards best practice and standards, National Physical Laboratory, London, England, *Point and Interval Estimation of Normal Process Variance using Measurements with Large Round-Off Errors*
- 2014 18<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, *Segmentation of Expected Duration of Maintenance Activities in Semiconductor Fabs*
- 2014 14<sup>th</sup> Annual Conference of ENBIS, Linz, Austria, *Customized Fetal Growth Modeling and Monitoring - A Statistical Process Control Approach*
- 2014 7<sup>th</sup> Galilee Quality Conference, Carmiel, Israel, **Chair** of the Academic session
- 2015 15<sup>th</sup> Annual Conference of ENBIS, Prague, Czech Republic, *A New Model for Duration and Segmentation of Maintenance Activities in Semiconductor Fabrication Factories (Fabs)*
- 2015 Member of the **advisory committee** for the 19<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel
- 2015 8<sup>th</sup> Galilee Quality Conference, Carmiel, Israel, **Chair** of the Academic session
- 2016 Member of the **advisory committee** for the 20<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel
- 2017 ENBIS Spring Meeting 2017, Predictive maintenance and reliability with big and complex data, monastery of Schlägl, Upper Austria, *Modeling the Variance of the Durations of Maintenance Activities in Semiconductor Fabs*
- 2018 Member of the **advisory committee** for the 10<sup>th</sup> Galilee Quality Conference, Carmiel, Israel

- 2019 19<sup>th</sup> Annual Conference of ENBIS, Budapest, Hungary, *Development of control chart of the mean for variables measured with large round-off errors*
- 2019 Member of the **advisory committee** for the 11<sup>th</sup> Galilee Quality Conference, Carmiel, Israel
- 2019 21<sup>th</sup> Industrial Engineering and Management Conference, Tel-Aviv, Israel, **Chair**
- 2020 Member of the **advisory committee** for the 12<sup>th</sup> Galilee Quality Conference, Carmiel, Israel

### **Seminar Talks**

- 2011 Statistics Seminar, Ben-Gurion University of the Negev, Beer-Sheva, Israel, Estimation of Normal Process Variance from Measurements with Large Round-Off Errors
- 2014 Ben-Gurion University of the Negev, Beer-Sheva, Israel, Work Study as a Basic Tool for Industrial Engineers
- 2014 Department of Obstetrics and Gynecology, Soroka University Medical Center, Beer-Sheva, Israel, Customized Fetal Growth Modeling and Monitoring - A Statistical Process Control Approach
- 2017 National Institute for Testing and Evaluation, Jerusalem, Israel, Statistical Process Control and Change Detection
- 2017 Technological Educational Institution of Western Greece, Lectures on various research topics, Erasmus Plus Program
- 2018 Department of Industrial Engineering and Management, Ariel University, Ariel, Israel, *Development of control chart of the mean for variables measured with large round off errors*

### **Organization of Conferences**

- 2013 Organizing professional conference on measurements and standards in quality management, a joint activity with the Israel Society for

### Quality, The Open University

- 2015 Organizing professional conference on Applied Statistics and Quality Improvement in Industry and Medicine, a joint activity with the Israel Society for Quality and IsENBIS, the Open University
- 2016 Organizing professional workshop on Teaching Statistics by using Learning Technologies, a joint activity with the Research Center for Innovation in Learning Technologies and the Israel Statistical Association (ISA), the Open University
- 2017 Organizing professional conference on Data Processing and Data Analysis for Quality Management and Quality Improvement, a joint activity with the Israel Society for Quality and IsENBIS, the Open University
- 2018 Organizing professional conference on Maintenance, Reliability and Process Control, a joint activity with the Israel Society for Quality and IsENBIS, the Open University
- 2019 Organizing professional conference on Quality – Research and Applied Aspects, a joint activity with the Israel Society for Quality and IsENBIS, the Open University

### **Scholarships**

- 2001-2007 High-Tech scholarship for outstanding Ph.D. students in the high technology fields, Ben-Gurion University

### **Prizes**

- 2002, Prize for outstanding research, the 12th Industrial Engineering and Management Conference
- 2020, Certification of Appreciation from the Israel Society for Quality for outstanding activity to promote the field of Quality in Israel



## **Sponsored Research**

- 2010, the Open University, Encouragement Research Award for submitting research proposals to NIH and ISF at the same year, 20,000 IS.
- 2012, the Open University, Personal Research Fund, "Monitoring fetal growth via customized growth model", 22,500 IS.
- 2016, the Open University, Personal Research Fund, "Analyzing acoustical and physiological signals to detect and classify apraxia of speech in children", 40,000 IS.
- 2017, principle investigator, "Facile Multi-Dimensional Proton LF-NMR Relaxation Biosensor System for Monitoring of Bio-Waste Conversion Process to Biofuels and By-Products", the Ministry of Science. Cooperated with Prof. Zeev Wiesman, Prof. Charles Linder (Ben-Gurion University) and Prof. Ofer Levi (the Open University), Approved, 1.3 million IS.

## **Teaching**

### **A. Teaching Responsibility for Open University Courses**

- Work Measurement and Methods Improvement
- Operations Management I
- Operations Management II
- Facility Layout and Associate Systems Design
- Final Project
- Dynamic Planning: Applications in Human Resources
- Statistical Techniques for Manpower Planning
- Quality Control
- The Strategy of Operations
- Operations Management in Organizations

## **B. Other Teaching Experience**

### **1998-2009** Teaching:

1. Dept. of Industrial Management, Sapir College, Courses: Probability, Mathematics, Quality Control, Reliability, Work Study
2. School of Management, Departments: business administration, Management, Hotel and Tourism Management, Ben-Gurion University, Courses: Statistics, Mathematics, Statistical Process Control
3. Dept. of Industrial Engineering and Management, Ben-Gurion University, Course: Work Study
4. Faculty of Health Sciences, Dept. of Health Systems Management, Ben-Gurion University, Courses: Statistics, Mathematics, Work Study

### **1994-1998** Teaching Assistant:

1. Dept. of Industrial Engineering and Management, Ben-Gurion University, Courses: Probability, Statistics, Quality Control, Production Planning and Control, Operation Research
2. School of Management, Departments: business administration (MBA), Management, Hotel and Tourism Management, Ben-Gurion University, Courses: Probability, Statistics, Mathematics, Production Planning and Control, Operation Research
3. Technological Pre Academic Dept. of Ben-Gurion University, Mathematics course
4. Faculty of Health Sciences, Dept. of Health Systems Management, Ben-Gurion University, Course: Probability, Statistics, Mathematics

### **2004-2015** Supervision of Undergraduate Projects:

1. 2004-2015, Supervision of 18 undergraduate final projects,

Ben-Gurion University

2. 2008-2016, Supervision of 11 undergraduate final projects including research projects, The Open University
3. 2012, Supervision of seminar project, The Open University

### **C. Supervision of Graduate Students**

- 2014** Maya Malamud, M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Monitoring fetal growth via customized dynamically-updated growth model", Co-Supervisors: Prof. Haim Shore and Prof. Asher Bashiri.
- 2018** Michal Ben-David, M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Control Charts for Variables Measured with Large Round-Off Errors", Co-Supervisors: Prof. Edna Schechtman and Prof. Ofer Levi.
- 2018** Itai Regev, M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Segmentation Models for the Duration of Preventive Maintenance in Semi-Conductor Fabs", Co-Supervisor: Prof. Israel Parmet.
- 2018** Roman Malih, M.Sc. thesis, Industrial Engineering and Management, Ben-Gurion University, "Adaptive Memory Allocation Model in Multi-Core Machines Cluster", Co-Supervisors: Prof. Israel Parmet and Prof. Ofer Levi.
- In Progress** Dima Shulga, M.Sc. thesis, Mathematics and Computer Science, The Open University, "Analyzing Acoustical Signals to Detect and Classify Apraxia of Speech in Children", Co-Supervisors: Dr. Anat Lerner, Prof. Ofer Levi and Dr. Vered Silber-Varod.
- In Progress** Itai Regev, Ph.D, Industrial Engineering and Management, Ben-Gurion University, "Modeling the Variance of the Durations of Maintenance Activities in Semiconductor Fabs", Co-Supervisor: Prof. Israel Parmet.
- In Progress** Roman Malih, Ph.D, Industrial Engineering and Management, Ben-Gurion University, "Sparse Representation Methods for LR-NMR 2D Spectrum Reconstruction", Co-Supervisors: Prof. Ofer Levi and Prof. Israel Parmet.
- In Progress** Salvatore Campisi-Pinto, PostDoc, the Open University, "Facile

Multi-Dimensional Proton LF-NMR Relaxation Biosensor System for Monitoring of Bio-Waste Conversion Process to Biofuels and By-Products", Cooperated with Prof. Zeev Wiesman, Prof. Charles Linder (Ben-Gurion University) and Prof. Ofer Levi (the Open University), sponsored by the Ministry of Science.

## **List of Publications**

### **Articles in Refereed Journals**

1. **Benson-Karhi, D.**, Shore, H. and Shacham, M.; Applying Response Modeling Methodology to Model Temperature-Dependency of Vapor Pressure; Lecture Series on Computer and Computational Sciences; 4; 2005; 835-838, Brill Academic Publishers, The Netherlands.
2. Shore, H. and **Benson-Karhi, D.**; Forecasting S-shaped diffusion processes via response modeling methodology; *Journal of Operational Research Society*; 58; 2006; 720-728.
3. **Benson-Karhi, D.**, Shore, H. and Shacham, M.; Modeling Temperature-Dependent Properties of Water via Response Modeling Methodology (RMM) and Comparison with Acceptable Models; *Journal of Industrial and Engineering Chemistry*; 46; 2007; 3446-3463.
4. Shacham, M., Brauner, N., Shore, H. and **Benson-Karhi, D.**; Predicting Temperature-Dependent Properties by Correlations Based on Similarity of Molecular Structures: Application to Liquid Density; *Journal of Industrial and Engineering Chemistry*; 47; 2008; 4496-4504.
5. Shore, H. and **Benson-Karhi, D.**; Modeling Temperature-Dependent Properties of Oxygen, Argon and Nitrogen via RMM; *Industrial and Engineering Chemistry Research*; 49; 2010; 9469-9485.
6. **Benson-Karhi, D.**, Dvir, E., Regev, I. and Schechtman, E.; Estimation of a Normal Process Variance from Measurements with Large Round-Off Errors; *IET Science, Measurement and Technology*; 7; 2013; 180-189.
7. Shore, H., **Benson-Karhi, D.**, Malamud, M. and Bashiri, A.; Customized Fetal Growth Modeling and Monitoring – A Statistical Process Control Approach; *Quality Engineering*; 26:3; 2014; 290-310.

8. **Benson-Karhi, D.**, Dvir, E., Regev, I. and Schechtman, E.; Using Measurements with Large Round-Off Errors for Interval Estimation of Normal Process Variance; *IET Science, Measurement and Technology*; 9:8; 2015; 1050-1056.
9. Regev, I. and **Benson-Karhi, D.**; Segmentation of the Expected Duration of Maintenance Activities in Semiconductor Fabs; *IEEE Transactions on Semiconductor Manufacturing*; 29:3; 2016; 223-229.
10. **Benson-Karhi, D.**, Shore, H. and Malamud, M.; Modeling Fetal Growth with Response Modeling Methodology (RMM); *Communications in Statistics - Simulation and Computation*; 47; 2017; 129-142.
11. Campisi-Pinto, S., Levi, O., **Benson-Karhi, D.**, Cohen, M., Resende, MT., Saunders, M., Linder, C. and Wiesman, Z.; Analysis of the Regularization Parameters of Primal–Dual Interior Method for Convex Objectives Applied to 1H Low Field Nuclear Magnetic Resonance Data processing; *Applied Magnetic Resonance*; 2018; 1-22.
12. Campisi-Pinto, S., Levi, O., **Benson-Karhi, D.**, Cohen, M., ResendeS, MT., Saunders, M., Linder, C. and Wiesman, Z.; Simulation-Based Sensitivity Analysis of Regularization Parameters for Robust Reconstruction of Complex Material's T1 – T2 1H LF-NMR Energy Relaxation Signals, *Applied Magnetic Resonance*; 51:3; 2019.

### Articles in Refereed Conference Proceedings

1. Shore, H., **Benson-Karhi, D.**, Brauner, N. and Shacham, M.; Prediction of Temperature-Dependent Properties by Correlations Based on Similarity of Molecular Structures; *AIChE: American Institute of Chemical Engineering*; 2007; paper 335I.
2. **Benson-Karhi, D.**, Dvir, E., Regev, I. and Schechtman, E.; Estimation of a Normal Process Variance from Measurements with Large Round-Off Errors; Recent Advances in Manufacturing Engineering; *Proceedings of The 4<sup>th</sup> International Conference on Manufacturing, Quality and Production Systems (MEQAPS'2011)* 2011; 297-302.
3. Regev, I. and **Benson-Karhi, D.**; Segmentation of the Expected Duration of Maintenance Activities in Semiconductor Fabs; Advanced Semiconductor Manufacturing Conference (ASMC - SEMI), *IEEE conference publications*;

2015; 280-285.

4. Regev, I., **Benson-Karhi, D.** and Parmet, I.; Modeling the Variance of the Durations of Maintenance Activities in Semiconductor Fabs; Advanced Semiconductor Manufacturing Conference (ASMC - SEMI), *IEEE conference publications*; 2016.
5. Shulga, D., Silber-Varod, V., **Benson-Karhi, D.**, Levi, O., Vashdi, A. and Lerner, A.; Toward Explainable Automatic Classification of Children's Speech Disorders; *Proceedings of the 22nd International Conference on Speech and Computer (Published in Springer)*; 2020.

### **Articles in Conference Proceedings (not refereed)**

**Not including** proceedings on CD and Abstract proceedings.

1. **Benson-Karhi, D.** and Shore, H.; Technological Forecasting using Inverse Normalizing Transformations; 12<sup>th</sup> Industrial Engineering and Management Conference; 2003; 126-130.
2. **Benson-Karhi, D.**, Shore, H. and Shacham, M.; Process and Product Design: Empirical Modeling and Prediction of Temperature-Dependent Properties of Pure Compounds; 4th Industrial Engineering and Management Research Conference; 2009; 203-218.
3. Regev, I., Eshel, R. and **Benson-Karhi, D.**; Segmentation of the Expected Duration of Maintenance Activities in Semiconductor Fabs; 18<sup>th</sup> Industrial Engineering and Management Conference; 2014.
4. Malih, R., Levi, O. and **Benson-Karhi, D.**; Adaptive Memory Allocation Model in Multi-Core Machines Cluster; 21<sup>th</sup> Industrial Engineering and Management Conference; 2019.

### **Open University Books**

- 2009            Study guide for the book: "Zandin, K. B., (2003), *MOST Work Measurement Systems*, 3<sup>rd</sup> Ed., Marcel Dekker Inc.", for the course "Work Study", author (Hebrew).

- 2008-2009 Professional editing of the book "Work Study" written by prof. Yosi Hadad for The Open University (Hebrew).
- 2010-2013 Study guide for the book: "Montgomery, D. C., (2008), *Introduction to Statistical Quality Control*, 6<sup>th</sup> Ed., Wiley, New York"; for the course "Quality Control"; author (Hebrew).
- 2012 Academic Responsibility for updating the course "Dynamic Planning: Applications in Human Resources" (Hebrew).

### **Publications in Hebrew**

Benson-Karhi, D., Ben-David, M. and Kenett, R.; Data Science; *Journal of the Israel Society for Quality*; 60; 2019.