

**Name: Dr. Eliahu Khalastchi**  
The Collage Management of Academic Studies

**Date: 08/11/16**

## **CURRICULUM VITAE**

### **1. Personal Details**

Home Telephone Number: 03-7169249  
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Marital Status: Happily Married



### **2. Higher Education**

#### **A. Undergraduate and Graduate Studies**

BSc. In Computer Science, Bar-Ilan University (2005-2008).  
MSc. In Computer Science, Artificial Intelligence, Robotics, Bar-Ilan University (2008-2010).  
Thesis Title: Anomaly Detection in Unmanned Vehicles.  
Advisor: Prof. Gal A. Kaminka

#### **B. Doctoral Degree and Post-Doctoral Studies**

Ph.D In Information System Engineering, Artificial Intelligence, Robotics, Ben-Gurion University of the Negev (2011-2015).  
Dissertation: Model-based Diagnosis for robotic Systems  
Advisors: Prof. Lior Rokach, Dr. Meir Kalech  
Today: Joint research (as a post) about Nano-Robotics with Prof. Gal Kaminka, BIU.

### **3. Academic Ranks and Tenure in Institutes of Higher Education**

<b>Dates</b>	<b>Institution and Department</b>	<b>Rank/Position</b>
06.2010	Collage of Management Academic Studies, Computer Science School	Lecturer (מן החוץ)
03.2014	Ben-Gurion University of the Negev, Information System Engineering Department	Lecturer (מן החוץ)
10.2015	Collage of Management Academic Studies, Computer Science School	Lecturer (משרה עיקרית, מחקר)
03.2016	Bar-Ilan University, Computer Science Department	Lecturer (עמית הוראה)



#### **4. Offices in Academic Administration**

- Coordinator of the computer science subjects
- Member of the teaching committee
- Pioneer creator of a MOOC course

#### **5. Scholarly Positions and Activities outside the Institution**

#### **6. Participation in Scholarly Conferences**

##### **a. Active Participation**

<b>Date</b>	<b>Name of Conference</b>	<b>Place</b>	<b>Subject of Lecture/Discussion</b>	<b>Role</b>
2011	AAMAS	Taiwan	Online Anomaly Detection in Unmanned Vehicles	Speaker
2012	DX Workshop	UK	Sensor Fault Detection and Diagnosis for Autonomous Systems, Multi-Layered Model Based Diagnosis in Robots	Speaker
2013	AAMAS	US	Sensor Fault Detection and Diagnosis for Autonomous Systems	Speaker
2013	DX Workshop	Israel	A Hybrid Approach for Fault Detection and Diagnosis in Autonomous Systems	Speaker Organizer
2014	AAMAS	France	A Hybrid Approach for Fault Detection and Diagnosis in Autonomous Systems	Speaker
2014	DX Workshop	Austria	Improving a Multiagent Team with a Model-Based Diagnosing Coach	Speaker

##### **b. Organization of Conferences or Sessions**

<b>Date</b>	<b>Name of Conference</b>	<b>Place</b>	<b>Subject/Role of Conference, Comments</b>	<b>Role</b>
2013	DX Workshop	Israel	The workshop of the AI diagnosis community	Organizer (helped Meir)

#### **7. Invited Lectures\ Colloquium Talks**

<b>Date</b>	<b>Place of Lecture</b>	<b>Name of Forum</b>	<b>Presentation/Comments</b>
2016	BGU	Department seminar	Ph.D. dissertation
2016	Colman	School colloquium	Ph.D. dissertation

## 8. Research Grants

### a. Grants Awarded

Role in Research	Co-Researchers	Topic	Funded by/Amount	Year
M.Sc. Student	Advisors	Anomaly Detection	Maf'at	2010
Ph.D. Student	Advisors	Spam detection	Deutsche Telekom	2012
Ph.D. Student	Advisors	Fault diagnosis	General Motors	2013

## 9. Scholarships, Awards and Prizes

### The IBM Ph.D. Fellowship Award 2014-2015.

The IBM Ph.D. Fellowship Awards Program is an intensely competitive worldwide program, which honors exceptional Ph.D. students who have an interest in solving problems of interest to IBM and which are fundamental to innovation including, innovative software, new types of computers, technology, and interdisciplinary projects that create social and business value.

### Outstanding Lecturer

The Collage Management of Academic Studies, 2014.

## 10. Teaching

### a. Courses Taught in Recent Years

Year	Course Name	Type: Lecture/Seminar/Workshop/ High Learn Course/Introduction	Degree	No. of Students
2008-11	Advanced Programming 1 and 2	High Learn course	TA	required undergrad course (thought all instances)
2010-2016	Algorithmic Programming (in Java)	High Learn course	Lecturer	required undergrad course (thought all instances)
2010-2014	Operating Systems Concepts	High Learn course	Lecturer	required undergrad course (thought all instances)
2012-...	Object Oriented Programming (in C++)	High Learn course	Lecturer	required undergrad course (thought all instances)
2014-...	Advanced Topics in Programming (in C#)	High Learn course	Lecturer	required undergrad course (thought all instances)
2016	Object Oriented Software Engineering	High Learn course	Lecturer	required undergrad course (thought all instances)
2016-...	Advanced Programming 2	High Learn course	Lecturer	required undergrad course (thought all instances)
2017-...	Advanced Software Development 1 and 2	High Learn course	Lecturer	required undergrad course (thought all instances)

b. **Supervision of Graduate Students**

Just finished my Ph.D., I will help advising M.Sc. students in BIU.  
I did, however, advised undergrads at BGU and we published a workshop paper.

## **11. Miscellaneous**

My Ph.D. dissertation have yielded **4 patents**, and 4 journal papers which are pending.

Pending Journal Papers:

1. On Fault Detection and Diagnosis in Robotic Systems, *E Khalastchi, M Kalech, (2016)*
2. On Fault Detection and Diagnosis in Multi-Robot Scenarios, *E Khalastchi, M Kalech, (2016)*
3. Improved Sensor Based Fault Detection for Robotic Systems, *E Khalastchi, M Kalech, L Rokach (2016)*
4. A Hybrid Approach for Fault Detection and Diagnosis in Robotic Systems, *E Khalastchi, M Kalech, L Rokach (2016)*

Experience in supervision of final undergrad projects (BGU, Colman)

**Teaching activities:**

- Making algorithmic programming "the most important course" in the eyes of our graduates
- Establishing the rules of thumb for teaching programming the right way (מהפיכת התכנות)
- Introducing programming tests that take hold on a computer
- The unification of OO software engineering and algorithmic programming, and the creation of advanced software development course.
- Coordinating the academic QA job to improve our assignments checking.

## **12. Professional Experience**

IDF, Air-force 2000-2005, Major (reserved)

## **PUBLICATIONS**

### **A. Ph.D. Dissertation**

### **D. Articles in Refereed Journals**

#### **Published**

1. **Online Data-Driven Anomaly Detection in Autonomous robots**, *E Khalastchi, GA Kaminka, M Kalech*, Knowledge and Information Systems (2014).
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## **F. Articles in Conference Proceedings**

### **Published**

1. **Detecting anomalies in unmanned vehicles using the mahalanobis distance.** *R Lin, E Khalastchi, GA Kaminka*, Robotics and Automation (ICRA), 2010 IEEE International Conference on, 3038-3044
  2. **Online anomaly detection in unmanned vehicles.** *E Khalastchi, GA Kaminka, M Kalech, R Lin*. 2011 The 10th International Conference on Autonomous Agents and Multiagent systems (AAMAS) volume1- 115-122.
  3. **Towards Partial (and Useful) Model Identification for Model-Based Diagnosis.** *Vladimir Sadov, Elisha Khalastchi, Meir Kalech, Gal A Kaminka*, in the Eighteenth International Workshop on Principles of Diagnosis (DX-10), Portland 2010
  4. **Sensor Fault Detection and Diagnosis for Autonomous Systems,** *E Khalastchi, M Kalech, L Rokach, Y Shicel, G Bodek*. In the 23ed International Workshop on Principles of Diagnosis (DX-12), UK 2012
  5. **Multi-Layered Model Based Diagnosis in Robots.** *E Khalastchi, M Kalech, L Rokach*. In the 23ed International Workshop on Principles of Diagnosis (DX-12) , UK 2012
  6. **Sensor Fault Detection and Diagnosis for Autonomous Systems,** *E Khalastchi, M Kalech, L Rokach* . In the twelfth International Conference on Autonomous Agents and Multiagent Systems (AAMAS), US 2013
  7. **A Hybrid Approach for Fault Detection and Diagnosis in Autonomous Systems,** *E Khalastchi, M Kalech, L Rokach*. In the 24th International Workshop on Principles of Diagnosis (DX-13), IL 2013
  8. **A Hybrid Approach for Fault Detection and Diagnosis in Autonomous Systems,** *E Khalastchi, M Kalech, L Rokach*. International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Paris 2014
  9. **Improving a Multiagent Team with a Model-Based Diagnosing Coach,** *E Khalastchi, M Kalech, L Rokach*. In the 25th International Workshop on Principles of Diagnosis (DX-14), Austria 2014
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## **L. Summary of My Research Activities and Future Plans**

My research involved exploration and creation of fault detection and diagnosis methods for robotic systems. Some of my methods are patented, others have contributed to other fields, e.g., spam detection, anomaly detection in patients during anesthesia. I have gained insights in machine learning, data driven approaches, model based approaches, knowledge based approaches, multi-agent systems and multi-robotic systems. I have dealt with UAVs and laboratory robots, and simulated robotic swarms.

These days I'm contributing to a research in Nano-robotic swarms, which may deploy a cure under complex conditions and constraints. In addition, I continue to investigate how fault detection approaches may help robotic systems in adversarial environments.

Some of the knowledge that my colleagues and I have acquired can already be given in the form of a MAGNETON, which I plan to apply.

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