

**Name: Kfir Bar**

**Date: 28.11.2016**

Computer Science, College of Management, Academic Studies

## **CURRICULUM VITAE**

### **1. Personal Details**

Cellular Phone: +972-54-4457771

Electronic Address: barkfir@yahoo.com

### **2. Higher Education**

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

**BA, Computer Science, The College of Management, Israel      1999-2002**

Major topic and final project: Speech Recognition. Graduated summa cum laude.

**MSc, Computer Science, Tel Aviv University      2002-2006**

Research Title: Arabic to English Example Based Machine Translation.

Supervisors: Prof. Nachum Dershowitz and Prof. Yaacov Chouka (from Bar Ilan University, Israel). Graduated summa cum laude.

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

**PhD, Computer Science, Tel Aviv University      2008-2013**

Research Title: Deriving Paraphrases for Highly Inflected Languages, with a Focus on Machine Translation.

Supervisor: Prof. Nachum Dershowitz.

**Postdoc, Digital Humanities, The Hebrew University      2014-2015**

Investigating semantic techniques for indexing motif titles Translation.

Supervisor: Prof. Alexander Kulik.

### **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>
04/2007	ICITIS	Morocco	Example-Based Arabic-to-English Translation	
06/2009	IEEE international conference on Intelligence and security informatics	Dallas, Texas	Automatically Classifying Documents by Ideological and Organizational Affiliation	
06/2010	Israeli Seminar on Computational Linguistics (ISCOL)	Tel Aviv, Israel	Using Synonyms for Arabic-to-English Example-Based Translation	Organizing Committee
08/2009	Open Machine	Ottawa,	Tel Aviv University's System	



	Translation 2009 Evaluation	Canada	Description for NIST EVAL 2009	
11/2010	The Ninth Conference of the Association for Machine Translation in the Americas	Denver, Colorado	Using Synonyms for Arabic-to-English Example-Based Translation	
12/2010	International Workshop on Spoken Language Translation	Paris, France	Tel Aviv University's System Description for IWSLT 2010	
01/2011	International Workshop on Machine Translation and Morphologically-rich Languages	Haifa, Israel	Using Verb Paraphrases for Arabic-to-English Example-Based Translation	
07/2012	ACL 2012	Jeju, Korea	Building an Arabic Multiword Expressions Repository	
12/2012	The 24th International Conference on Computational Linguistics (COLING)	Mumbai, India	Deriving Paraphrases for Highly-Inflected Languages from Comparable Documents	
06/2013	Israeli Seminar on Computational Linguistics (ISCOL)	Beer Sheva, Israel	Extracting Multiword Expressions for Arabic	
06/2013	Bar-Ilan Symposium on Foundations of Artificial Intelligence	Bar Ilan University, Israel	Deriving Paraphrases for Highly Inflected Languages from Comparable Documents	
04/2014	Conference on Intelligent Text Processing and Computational Linguistics (CICLing)	Kathmandu, Nepal	Inferring Paraphrases for a Highly Inflected Language from a Monolingual Corpus	
09/2014	Israeli Seminar on Computational Linguistics (ISCOL)	Haifa, Israel	Automatic Transliteration of Judeo-Arabic Texts into Arabic Script	
10/2014	Conference on Empirical Methods on Natural Language Processing (EMNLP)	Doha, Qatar	The Tel Aviv University System for the Code-Switching Workshop Shared Task	
10/2015	Conference on Intelligent Text Processing and Computational Linguistics (CICLing)	Egypt	Processing Judeo-Arabic Texts	
03/2016	SemEval-2016	San Diego, California	SLS at SemEval-2016 Task 3: Neural-based Approaches for Ranking in Community Question Answering	

**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>
06/2010	Israeli Seminar on Computational Linguistics (ISCOL)	Tel Aviv University, Israel	The most important Israeli conference on Natural Language Processing	Organizing Committee

## 7. Invited Lectures\ Colloquium Talks

Date	Place of Lecture	Name of Forum	Presentation/Comments
01/2014	Menlo Park, California	SRI Artificial Intelligence Seminar	Invited by SRI, <u>topic</u> : Deriving Paraphrases for Highly Inflected Languages, with a Focus on Machine Translation

## 8. Research Grants

### b. Submission of Research Proposals – Pending

Role in Research	Co-Researchers	Topic	Funded by	Year
Co-Researcher	Prof. Shmuel Itzikovitz, Dr. Ido Ziv, Dr. Galit Haim, Dr. Igor Ruchlin	Trilateral Proposal for Early Identification and Intervention for Stress Related Disorders Using mHealth	DFG (German Research Foundation)	2017

## 9. Scholarships, Awards and Prizes

2001 – Wolf scholarship award for excellence (during BA)

2001 – College of Management award for excellence (during BA)

2005 – Tel Aviv University award for excellence (during MSc)

PhD – full scholarship by Tel Aviv University for 3 years.

Summer 2013 – visiting scholar at the Center for Computational Learning Systems at Columbia University, New York. Full scholarship by Tel Aviv University.

## 10. Teaching

### a. Courses Taught in Recent Years

Year	Course Name	Type: Lecture/Seminar/Workshop/ High Learn Course/Introduction	Degree	No. of Students
2008-2012	Java Programming	Lecture	BSc	50
2010, 2011, 2012	Computer Networks	Lecture	BSc	50-150
2009	Algorithms 1	Lecture	BSc	50-150
2013, 2014	Natural Language Processing	Lecture	MSc, PhD	20-30
2012, 2014, 2015	Natural Language Processing	Lecture	BSc	20
2013, 2014, 2015	Natural Language Processing	Seminar	MSc, PhD	15
2012-2016	Machine Learning	Lecture	BSc	100
2014-2016	Network Lab	Lab	BSc	100
2015	Machine Translation	Seminar	MSc, PhD	20
2016	Digital Humanities for	Seminar	BSc	15



	Computer Scientists			
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## **12. Professional Experience**

### **2000-2002 NLP Software Engineer, Baobab Inc.**

- Developing the natural language generation (NLG) engine.
- Developing tools for ontology management and integration.
- Development in C++.

### **2002-2005 Software Engineer, Itemfield Inc. (acquired by Informatica)**

- Member of the UI team.
- Designing and implementing front-end applications.
- Development in C++ (MFC) and Java (SWING, SWT).

### **Summer 2011 Visiting Scholar, Columbia University, NY**

- Invited by the Center for Computational Learning Systems (CCLS) @ Columbia University to participate in their research activities.
- Working under the supervision of Prof. Mona Diab.
- Performing research in the field of Multi Word Expressions (MWE) in Arabic. Part of the work has been recently published (see publications below).

### **2005-2012 CTO/VP R&D, IntuView Ltd.**

- Managing a team of 10 NLP developers and linguists. Some had years of experience in the field (PhD, MSc), and for some it was their first professional position.
- Responsibility for the design and implementation of a system, which analyses unstructured text written in different languages (Arabic, Urdu, English, French and Spanish) and generates immediate insights, such as named entities, concepts, sentiment, and document classification information.
- Designing algorithms that work on top of RDF store technologies, such as Oracle Semantic Network, Allegro graph, and Jena.
- Designing and developing a name-matching application, focusing on culture-based and naming convention models.
- Responsibility for designing and building large ontologies for the domain of homeland security and defense.

**About IntuView:** IntuView is dedicated to the development of software for security and defense applications. IntuView's core product performs analysis of textual documents, deducing explicit and implicit information on their authorship, political leanings, ideas, concepts, issues and sentiments, and extracting contextual information on entities mentioned in the texts. For more information please refer to [www.intuview.com](http://www.intuview.com)

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The College of Management  
Academic Studies

**2005-Present Lecturer at the School of Computer Science, College of Management Academic Studies**

- Active member of the academic committee of the undergraduate program for computer science (2011-present).
- Teaching basic courses – Algorithms, Computer Networks.
- Teaching advanced courses – Machine Learning, Natural Language Processing.
- Leading a research on semantic processing of social-media texts.
- Developing a system for homework plagiarism, using sophisticated semantic technologies.

**2014-Present External Lecturer at the School for Computer Science, Tel Aviv University**

- Teaching, together with Prof. Nachum Dershowitz a Natural Language Processing seminar for graduate students.
- Teaching, together with Prof. Nachum Dershowitz a Natural Language Processing course (<http://www.cs.tau.ac.il/courses/0368-4341/2015b/>).
- Teaching a Machine Translation seminar for graduate students (<http://cs.tau.ac.il/~kfirbar/mt-seminar.html>).
- Teaching a Digital Humanities seminar (with special focus on natural language processing), in the fall of 2016-217.

**2013-Present Co-founder and CTO, Comprendi Inc.**

- Comprendi turns textual big data into actionable marketing insights. Our platform analyzes huge amounts of text from social media and helps marketers better understand their target audience and target the right users with the right offer at the right time. More about Comprendi – [www.comprendi.net](http://www.comprendi.net)
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## PUBLICATIONS

### A. Ph.D. Dissertation

### E. Articles or Chapters in Scientific Books

(which are not Conference Proceedings)

#### Published

1. **Kfir Bar** and Nachum Dershowitz. Using Semantic Equivalents for Arabic-to-English Example-Based Translation. 2012. In: *Soudi, Abdelhadi, Ali Farghaly, Günter Neumann and Rabih Zbib (eds.), Challenges for Arabic Machine Translation*. viii, (pp. 49–72)
2. **Kfir Bar**, Yaacov Choueka, and Nachum Dershowitz, November 2014, “Matching Phrases for Arabic-to-English Example-Based Translation System”, *Language, Culture, Computation: Computational Linguistics and Linguistics, Essays Dedicated to Yaacov Choueka on the Occasion of His 75th Birthday, Part III, Nachum Dershowitz and Ephraim Nissan, eds., Lecture Notes in Computer Science*, vol. 8003, Springer-Verlag, Berlin, pp. 54-63
3. **Kfir Bar**, Mona Diab and Abdelati Hawwari. “Arabic Multiword Expressions”. November 2014. *Language, Culture, Computation: Computational Linguistics and Linguistics, Essays Dedicated to Yaacov Choueka on the Occasion of His 75th Birthday, Part III, Nachum Dershowitz and Ephraim Nissan, eds., Lecture Notes in Computer Science*, vol. 8003, Springer-Verlag, Berlin

### F. Articles in Conference Proceedings

#### Published

1. **Kfir Bar**, Nachum Dershowitz, and Yaacov Choueka, Apr. 2007, “Example-Based Arabic-to-English Translation”, In *Proceedings of a Workshop on Arabic Natural Language Processing*, Fez, Morocco, pp. 325/1-4.
  2. Moshe Koppel, Navot Akiva, Eli Alshech and **Kfir Bar**, June 2009, “Automatically Classifying Documents by Ideological and Organizational Affiliation”, In *Proceedings of the 2009 IEEE international conference on Intelligence and security informatics (ISI'09)*.
  3. **Kfir Bar**, Nachum Dershowitz, Nov. 2010, “Using Synonyms for Arabic-to-English Example-Based Translation”, In *Proceedings of The Ninth Conference of the Association for Machine Translation in the Americas (AMTA-9)*, Denver, CO, USA.
  4. Abdelati Hawwari, **Kfir Bar** and Mona Diab, July 2012, “Building an Arabic Multiword Expressions Repository”, In *Proceedings of the ACL 2012 Joint Workshop on Statistical Parsing and Semantic Processing of Morphologically Rich Languages*, Jeju, Korea.
  5. **Kfir Bar** and Nachum Dershowitz, Dec. 2012, “Deriving Paraphrases for Highly-Inflected Languages from Comparable Documents”, In *Proceedings of the 24th International Conference on Computational Linguistics (COLING)*, Mumbai, India.
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6. Lior Wolf, Yair Hanani, **Kfir Bar**, and Nachum Dershowitz, April 2014, "Joint word2vec Networks for Bilingual Semantic Representations" (Poster), *Conference on Intelligent Text Processing and Computational Linguistics (CICLing)*, Kathmandu, Nepal.
  7. **Kfir Bar** and Nachum Dershowitz, April 2014, "Inferring Paraphrases for a Highly Inflected Language from a Monolingual Corpus", In *Proceedings of the Conference on Intelligent Text Processing and Computational Linguistics (CICLing), Part 2*, Kathmandu, Nepal, *Lecture Notes in Computer Science*, vol. 8404, Springer-Verlag, Heidelberg, pp. 254-270.
  8. **Kfir Bar** and Nachum Dershowitz, October 2014, "The Tel Aviv University System for the Code-Switching Workshop Shared Task", In *Proceedings of the First Workshop on Computational Approaches to Code-Switching*, Thamar Solorio, Elizabeth Blair, Suraj Maharjan, Steve Bethard, Mona Diab, Mahmoud Gonheim, Abdelati Hawwari, Fahad AlGhamdi, Julia Hirshberg, Alison Chang, and Pascale Fung, eds., *Conference on Empirical Methods on Natural Language Processing (EMNLP)*, Doha, Qatar.
  9. **Kfir Bar**, Nachum Dershowitz, Lior Wolf, Yackov Lubarsky, and Yaacov Choueka, 2015, "Processing Judeo-Arabic Texts", In *Proceedings of the First Arabic Natural Language Processing Conference, IEEE, Cairo*
  10. Mitra Mohtarami, Yonatan Belinkov, Wei-Ning Hsu, Yu Zhang Tao Lei, **Kfir Bar**, Scott Cyphers, James Glass, January 2016, "SLS at SemEval-2016 Task 3: Neural-based Approaches for Ranking in Community Question Answering", In *Proceedings of the 10th International Workshop on Semantic Evaluation (SemEval-2016)*, San Diego
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## **L. Summary of My Research Activities and Future Plans**

I am a natural language processing (NLP) and machine learning researcher. I received my PhD from Tel-Aviv University for a thesis titled “Deriving Paraphrases for Highly Inflected Languages, with a Focus on Machine Translation”, under the supervision of Prof. Nachum Dershowitz. In particular, my research focuses on automatic learning techniques for identifying paraphrases in Semitic languages texts, so as to improve the performance of an automatic Hebrew/Arabic-to-English translation system.

I have a special on going interest in research fields that combine computational techniques with large digital corpora from the humanities and social science. I worked as a postdoc in the Department of Humanities at the Hebrew University in Jerusalem, under the supervision of Prof. Alexander Kulick. As part of my position I was investigating semantic techniques for indexing motif titles.

In 2013, I co-founded Comprendi focusing on delivering actionable insights and hyper segmentation leveraging big data. In a previous position, I was the chief technology officer (CTO) at IntuView Inc. for seven years. At IntuView we developed semantic-based algorithms for named entity recognition and document classification.

I am a computer-science lecturer and a member of the academic committee at the College of Management Academic Studies.

I am teaching seminars and courses for graduate students as an external lecturer at Tel Aviv university, mostly focusing on natural language processing and machine translation.

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