

# Amir Aavani

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Laserlike Inc., 888 Villa Street  
Mountain View, CA, USA

## Work Experience

- Laserlike Inc., Mountain View, CA, USA Jan 2018 - Now (Software Engineer)  
**Language Detection** Developed a machine learning based system to detect the language of a given document.  
**Trend Detection** Developed a system that consumes the documents on the web, in real-time, and reports the trending stories.
- Google, Mountain View, CA, USA Aug 2013 - Dec 2017 (Software Engineer)  
**Ranking algorithm** Applied different Statistical and Machine Learning approaches to improve the quality of the ranking algorithm.  
**Data Extraction** Worked on/Lead several projects whose goals were to better understand the content of the web pages.  
**Document Summarizer** Leader the Document Summarizer Project. The goal of this project was to develop an extraction based summarization system.  
**Multi-Document Summarizer** Proposed the project and also Lead a team of engineers on the multi-document summarization project.
- A Thinking Ape, Vancouver, BC, Canada 2012(Summer) (Internship)  
**Optimizing the Rendering System** Improved the CPU load/running time and memory usage of the existing rendering engine, by 50%.
- Sepanta Robotic Research Foundation., Tehran, Iran 2006 - 2008 (Researcher, Project Manager)  
**Persian Meta Search Engine** Being both the project manager and one of the engineers in this project, designed the architecture so that our meta engine used Google, Yahoo and MSN to procure a better result for Persian queries.  
**Persian OCR** Developed the recognition engine of the OCR, responsible for word segmentation, character recognition, etc.
- Sepanta Robotic Research Foundation., Tehran, Iran 2003 - 2006 (Part time, Researcher)  
**Persian ICR** Developed the recognition engine of the Persian ICR, an application which automates the process of obtaining data from hand-written forms (e.g. registration forms) with a high accuracy.

## EDUCATION

- Ph.D., Computing Science Department, 2008 - 2014  
Thesis Title: "Enfragma: A System for Grounding Extended First-Order Logic to SAT"  
Supervisor: Dr. Eugenia Ternovska  
Simon Fraser University
- M.Sc., Mathematical Science Department, Computer Science Group (Computation Theory), 2004- 2006 ; GPA: 17.60/20  
Thesis Title: "Information Theoretic Text Classification", accepted with score (19/20).  
Supervisor: Dr. Amin Farjudian  
Sharif University of Technology
- B.Sc., Computer Engineering Department, 2000- 2004; GPA: 17.16/20  
Thesis Title: "A New Compression Method for Re-Compressing Files", accepted with score (20/20).  
Supervisor: Dr. Mohsen Sharifi  
Iran University of Science & Technology

## FIELD OF INTEREST

- Complexity Theory and Computation Theory, specially NP-Complete Problems, Randomized Algorithm, Algorithm Design
- Artificial Intelligence and Machine Learning
- Search/Document Understanding and Beyond

## SPECIAL SKILLS

- Expert knowledge of programming languages: Pascal, Object-Pascal, C/C++, C, Java, PHP, Go.
- Expert knowledge of algorithm designs and problem solving.
- Expert knowledge of designing and implementing complex systems.

## *Other Projects that I was Involved in*

- *MX-Project*: As a part of my PhD research, I worked on developing a framework to the theoretical adding the support for aggregates to the grounder. This part of the project was mainly theoretical and I am going to propose algorithms which ground the input formula to different solving technology such as SAT and ILP. Also, as a member of the project, I designed and implemented my ideas.
- *PSP: Pascal Server Page*: I am one of developers in PSP-group which is going to develop a pascal based toolkit for developing web applications. The main structure of PSP is procedural and I am going to redesign and re-code the project and I am using object oriented in it. The new branch is named O-PSP and has some other features besides object oriented concepts. **Programming Language**: FPC/Object Pascal
- *Kaveh Server for Soccer Robocup Competition*: Developed for the “Server development competition” in Robocup 2005, this server has achieved the first rank of the competition. The server, instead of communicating the exact values with clients, sends them a series of Fuzzified values and expects them to respond in the same manner. To develop the server, I have used the source of the original Robocup soccer server, in C++ under Linux, and modified it such that it worked based on Fuzzy logic. **Programming Language**: C++
- *News crawler and organizer*: In this project, we have developed a crawler which automatically browses more than twenty news agencies and makes a record of them together with their meta-data (such as publish date, category, etc) in a database. Besides, a mechanism was implemented to retrieve the related news. The application piloted for a three-month period and although showing a good performance, was suspended due to lack of sponsorship. **Programming Language**: C++ for crawler and PHP for web-application

## PUBLICATIONS

- A. Aavani, D. Mitchell, E. Ternovska, “New Encoding for Translating Pseudo-Boolean Constraints into SAT”, *10th Symposium on Abstraction, Reformulation, and Approximation*, 2013.
- A. Aavani, N. Wu, E. Ternovska, D. Mitchell, “Enfragmo: A System for Modeling and Solving Search Problems with Logic”, *The 18th International Conference on Logic for Programming Artificial Intelligence and Reasoning*, 2012.
- A. Aavani, “Translating Pseudo-Boolean Constraints into CNF”, *Fourteenth International Conference on Theory and Applications of Satisfiability Testing*, 2011.
- A. Aavani, N. Wu, E. Ternovska, D. Mitchell, “Grounding Formulas with Complex Terms”, *Canadian Conference on Artificial Intelligence*, 2011.
- A. Aavani, N. Wu, E. Ternovska, D. Mitchell, “Grounding Formulas with Complex Terms”, *3rd International Workshop on Logic and Search*, 2010.
- A. Aavani, N. Wu, E. Ternovska, “Grounding Count Constraints”, *Accepted as a short paper in 16th International Conference on Logic for Programming Artificial Intelligence and Reasoning*, 2009.
- A. Aavani, S. Tasharofi, G. Unel, E. Ternovska, D. Mitchell “Speed-up Techniques for Negation in Grounding”, *16th International Conference on Logic for Programming Artificial Intelligence and Reasoning*, 2009.

- M. Sharifi, A. Aavani S. Tasharrofi, "Using XCS as a Predictor Engine in Compression", *International Conference on Intelligent Systems and Knowledge Engineering*, 2007.
- A. Aavani, A. Farjudian, M. Salmani, "Information Theoretic Text Classification", *12th Computer Society of Iran Computer Conference*, 2007.
- A. Aavani, R. Hesamifard, S. Bagheri, S. Remezani, V. Hashemi, "Pardis, a Fuzzy Extension to Multiagent Simulation Systems", *Fourteenth Iranian Computer Engineering Conference*, 2006.
- M. Salmani, A. Aavani, "Reducing Scan Base Testing Power by Using Genetic Algorithm", *Fourteenth Iranian Computer Engineering Conference*, 2006.
- K. Mizanian, M. Salmani, A. Aavani, M. Analoui, "A New Adaptive HTTP Protocol", *Canadian Conference on Electrical and Computer Engineering*, 2006.
- J. Sadeghi, A. Aavani, and M. Sharifi, "CyberSession: A New Proposition for E-Learning in Collaborative Virtual Environments", *International Conferences in Central Europe on Computer Graphics, Visualization and Computer Vision*, 2005.
- S. Parsa, S. Lotfi, O. Boushehrian, A. Aavani, S. Tasharrofi, "A New Method for Loop Parallelization Using Genetic Algorithms", *Ninth Iranian Computer Engineering Conference*, 2004.
- M. Sharifi, H. Mousavian, A. Aavani, "Predicting the Future State of the Robocup Simulation Environment: Heuristic and Neural Networks", *IEEE Man and Cybernetics*, 2003.