

# Dr Arshavir Blackwell

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## Summary

Artificial Intelligence/machine learning researcher with expertise in automated natural language processing. Extensive experience in designing adaptive, language-using applications and in directing research projects that study how humans and automated systems learn and use language.

## Tags

Artificial Intelligence, machine learning, computational linguistics, knowledge management, cognitive computing, natural language processing, data & text mining, text analytics, Hadoop, neural networks, unstructured information management, support vector machines, genetic algorithms, social graph

## Experience

<b>Chief Scientist/Engineer</b> <i>CitizenNet, Culver City, CA</i>	<b>2010 - present</b>
<b>Senior Research Scientist/Engineer</b> <i>Fox Interactive Media, Santa Monica, CA</i>	<b>2008 - 2010</b>
<b>Principal Computer Scientist</b> <i>MetaLINGS, San Jose, CA</i>	<b>2007</b>
<b>Senior Scientist/Director of Research</b> <i>H5 Technologies, San Francisco, CA</i>	<b>2005 - 2007</b>
<b>Senior Engineer &amp; Project Lead</b> <i>Entrieva, Reston, VA</i>	<b>2003 - 2005</b>
<b>Principal</b> <i>Adaptive Lava, Oakland, CA</i>	<b>2001-2003</b>
<b>Principal Scientist</b> <i>Comprecorp, Nevada City, CA</i>	<b>2001</b>
<b>Senior Engineer</b> <i>Ask Jeeves, Oakland, CA</i>	<b>1999-2000</b>

## Education

<b>PhD, Cognitive Science &amp; Psychology</b> University of California at San Diego, La Jolla, CA	<b>1995</b>
<b>A.B., Honors Cognitive Science &amp; Honors Creative Writing</b> Brown University, Providence, RI	<b>1987</b>

## Skills, research interests, & publications

### Languages

Java (10+ years), C (10+ years), C++ (10+ years), SAS (10+ years), Hadoop (3 years), Python (3 years)

### Experiment-related skills

Extensive experience with all aspects of experimental psychology research such as: background literature search, hypothesis development, design of experimental control system, experimental protocols and appropriate statistical analyses (including relevant computer applications).

### Research interests

Language processing and language acquisition in humans and connectionist networks, large scale cognitive systems, connectionist models of second language acquisition and lexical acquisition/processing, effects of working memory and other aspects of the general cognitive system on language.

### Patents

Benyamin, D. & Blackwell, A. (2013). Systems and methods for selecting and generating targeting information for specific advertisements based upon affinity information obtained from an online social network. Patent number: [US 20130218678 A1](#).

Benyamin, D., Hall, M., Chu, A. & Blackwell, A. (2012). Systems and methods for automatically generating campaigns using advertising targeting information based upon affinity information obtained from an online social network. Patent number: [US 20120158518 A1](#).

Benyamin, D., Chu, A., Pollock, A., Hall, M. & Blackwell, A. (2012). Generation of advertising targeting information based upon affinity information obtained from an online social network. Patent number: [US 20120158489 A1](#).

Sravanapudi, A., Sutler, M., Devand, S., Kalaputapu, R. & Blackwell, A. (2007). Analyzing content to determine context and serving relevant content based on the context. Patent number: [WO 2007076080 A2](#).

### Publications

Blackwell, A., Bates, E., & Fisher, D. (1996). The time course of grammaticality judgment. *Language and Cognitive Processes*, 11(4), 337-406.

Blackwell, A.W. & Bates, E. (1995). Inducing agrammatic profiles in normals: Evidence for the selective vulnerability of morphology under cognitive resource limitation. *Journal of Cognitive Neuroscience*, 7, 228-257.

Warren, W.H., Blackwell, A.W., Kurtz, K.J., Hatsopoulos, N.G., & others (1991). On the sufficiency of the velocity field for perception of heading. *Biological Cybernetics*, 65, 311-320.

Warren, W.H., Mestre, D.R., Blackwell, A.W., & Morris, M.W. (1991). Perception of circular heading from optical flow. *Journal of Experimental Psychology: Human Perception and Performance*, 17, 28-43.

Warren, W.H., Blackwell, A.W., & Morris, M.W. (1989). Age differences in perceiving the direction of self-motion from optical flow. *Journal of Gerontology*, 44, 147-153.

## Summary of Projects

2010 - present. Senior Scientist/Engineer, CitizenNet, Los Angeles

**Targeting and market analysis.** One of the main value-adds of CitizenNet is that it takes the complex API of Facebook advertising and targeting and hides it from our users under a layer of sophisticated artificial intelligence. My work at CitizenNet involves using both clustering and classification algorithms to enable that layer, drawing from a wide variety of machine learning techniques, including K-means clustering, self-organizing maps, multiple regression, neural networks, support vector machines, ensemble classifiers, and genetic algorithms for initial feature selection. The same algorithms can be used to provide detailed market analysis.

2008 - 2010. Senior Scientist/Engineer, Fox Audience Network, Los Angeles, CA

**Demographic prediction engine:** analyzed profiles of users with known demographic values and modeled them, in order to predict values for other users. The goal was to extrapolate from users with known features and predict (e.g.) age and gender in users where those features are missing.

**Buzz tracking:** used trend and rate analysis algorithms to track changes in frequency and intensity of targeted buzz words.

**Intent Miner:** helped to develop and test system to extract intents from unstructured text (e.g., "intent to purchase car," "intent to purchase cellphone," "just married," "just had a child").

2007. Principal Computer Scientist, MetaLINCS, San Jose, CA

**Innovation team:** supported innovations and improvements to MetaLINCS flagship e-discovery application.

2005 - 2007. Senior Scientist/Director of Research, H5 Technologies

**Lead research and development:** researched and developed improvements to business processes in order to increase accuracy and speed and lower cost, particularly search. These tools supported the company's core mission, which was to analyze very large (on the order of millions) document sets, in order to identify documents relevant to a particular legal case.

2003 - 2005. Senior Engineer & Project Lead, Entrieva, Reston, VA.

**Unstructured document management applications:** lead to maintain and upgrade then-current categorization software central to solutions provided by Entrieva. Architected new solutions to augment product portfolio in order to expand the company's services and increase its competitiveness.

1999 - 2000. Senior Engineer, Ask Jeeves, Emeryville, CA.

**Jeeves automation project:** lead on project to improve accuracy and lower cost for Jeeves question-answering system. As project lead, I identified bottlenecks in the creation of knowledge bases that were amenable to adaptive automation, created design specifications, and lead a team in writing code to implement those changes.