

Andrei Barbu

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<http://0xab.com>

Skills

extensive knowledge of algorithms, strong mathematics background, computer vision, visual perception, operating-system design, machine learning, cognitive science, compiler design, parallel programming, computer networks, semantic web, ontologies, linguistics, automatic differentiation, stochastic and nondeterministic programming languages, functional, logic and constraint programming, contributions to open-source projects

Languages

C++, Haskell, Scheme, Lisp, C, Prolog, MATLAB, Java, OCaml, Python, SQL, VHDL, x86 and MIPS assembly
native English and Romanian, competent German, basic French

Education

PhD student, Artificial Intelligence

Jan. 2008 – present

Purdue University, Professor Jeffrey M. Siskind

language and high-level reasoning for solving inverse vision and manipulation problems
machine learning situated in the real world using custom robots
stochastic modeling via probabilistic programming
grounding language in vision and robotic manipulation
optimization of large stochastic cognitive models
<http://0xab.com/research/>

Bachelor of Computer Science

2004 – 2008

University of Waterloo

complexity theory, real-time operating systems, graph theory, algorithm design, programming languages, medical imaging, linear programming, coding theory

Publications

Learning physically-instantiated robotic game play through visual observation

May 2010

Andrei Barbu, Siddharth Narayanaswamy, Jeffrey Mark Siskind
Proceedings of 2010 IEEE International Conference on Robotics and Automation
<http://0xab.com/icra2010/>

Employment History

Research Assistant

Jan. 2008 – present

Professor Jeffrey M. Siskind

Purdue University, USA

solved computer-vision and manipulation problems using AD-based optimization
designed and built custom special-purpose robots
implemented stochastic programs to use and produce language
TA for ECE473 and ECE570, Artificial Intelligence

Kernel Developer

May 2008 – August 2008

Google Summer of Code 2008 – the GNU Hurd

Purdue University, USA

designed and implemented an instrumentation framework for GNU Mach
implemented the DWARF2 debugging standard
debugger improvements
bug fixes and other new features

Undergraduate Research Assistant
Professor Jeffrey M. Siskind

July 2006 – Sept. 2006
Purdue University, USA

- numerous improvements to a C frontend, including updates for C99 and GNUC
- improvements to the existing Scheme compiler
- ported the Scheme→C compiler to x86-64
- ported various other applications to x86-64
- significant performance improvements

Software Developer and Knowledge Systems Architect
Dalin Software SA

July 2005 – May 2006
Laussane, Switzerland

- ontology, temporal, and spatial logic frameworks
- designed extensions to OWL, the Ontology Web Language
- designed and developed tools for querying and updating OWL+SWRL ontologies

Server Administrator
Adrex Consulting

2003 – 2008
Toronto, Canada

- maintained a network of Linux servers and Windows workstations

Developer and Server Administrator
Iflipout.com

Sept. 2002 – March 2003
Toronto, Canada

- developed complex network text-based games in C and C++
- maintained the internal Linux network
- developed and maintained an extensive set of unit tests
- helped debug and solve difficult issues in the customers' existing C and C++ code