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OBJECTIVE

I am looking for a position in a collaborative environment that utilizes and fosters my research expertise in machine learning and robotics

EDUCATION

Carnegie Mellon University, Pittsburgh, PA August 2003-present
Ph.D. candidate in Robotics and Artificial Intelligence (Expected October 2009)
School of Computer Science
Advisors: Geoffrey J. Gordon, Andrew W. Moore (former)
Research area:
Latent Variable and Predictive Models for Sequential Data

Carnegie Mellon University, Pittsburgh, PA May 2006
MS in Robotics
GPA: 3.93

University of Southern California, Los Angeles, CA May 2003
BS in Computer Science
BA in Mathematics and Economics
GPA: 3.88

IMMIGRATION STATUS: U.S. PERMANENT RESIDENT

WORK EXPERIENCE

MobileFusion, Pittsburgh, PA Summer 2008
Scientific Advisor (part-time)

Real-time Multi-sensor Human Detection

Working with a Pittsburgh technology startup to design their intelligent data processing and classification system, do background research, write a patent application, prototype HMM-based human detection for MobileFusion's portable multi-sensor device. We are using algorithms from Siddiqi, Gordon and Moore (2007). The algorithm will integrate audio, video, temperature and infrared sensors.

Google, New York, NY Summer 2007
Research Intern (mentors: Sanjiv Kumar, Daryl Pregibon)

Machine Learning for Automatic Classification of Videos and Mp3s

I developed an algorithm for classifying varying-length time series data such as videos and mp3s into different categories (distinct head motions in video, distinct music genres in mp3s). The algorithm was based on existing techniques for clustering sequential data (Fisher kernels and Rational kernels), and manifold embedding (Laplacian Eigenmaps). Results indicated favorable performance compared to existing methods

Intel, Santa Clara, CA Summer 2006
Research Intern (mentors: Georgios Theodorou, Shie Mannor)

Machine Learning for Adaptive Power Management on Laptops

I worked with a research group on Adaptive Power Management (APM) for laptops using machine learning techniques on laptop usage data. My focus was on creating algorithms for modeling user context to improve APM performance. I devised techniques based on clustering algorithms like K-means and mixtures-of-HMMs, resulting in increased insight into laptop user behavior as well as improved APM performance

Microsoft, Redmond, WA Summer 2002
Software Engineering Intern

I worked in a wireless networking team in the NT Server group, implementing and using test tools for the 802.11b networking component of the NT kernel

Synopsys, Mountain View, CA Summer 2001
Software Engineering Intern

I designed, implemented and deployed a scalable client-server Intranet application with authentication, a state-based UI and a database backend

Oblivion, Cupertino, CA Summer 2000
Software Engineering Intern

I designed and implemented a Windows API authentication plug-in for the company's intranet management software

SELECTED PUBLICATIONS

1. **Reduced-Rank Hidden Markov Models** (*under submission*)
2. **A Constraint Generation Approach to Learning Stable Linear Dynamical Systems**
Sajid Siddiqi, Byron Boots and Geoff Gordon. *Advances in Neural Information Processing Systems (NIPS)*, 2007 [[source code online](#)]
3. **Fast State Discovery for HMM Model Selection and Learning**
Sajid Siddiqi, Geoff Gordon and Andrew Moore. *Proceedings of the 11th International Conference on Artificial Intelligence and Statistics (AI-STATS)*, 2007 [[executables online](#)]
4. **A Latent Space Approach to Dynamic Embedding of Co-occurrence Data**
Purnamrita Sarkar, Sajid Siddiqi and Geoff Gordon. *Proceedings of the 11th International Conference on Artificial Intelligence and Statistics (AI-STATS)*, 2007
5. **Learning Stable Multivariate Baseline Models for Outbreak Detection**
Sajid M. Siddiqi, Byron Boots, Geoff Gordon, Artur W. Dubrawski. *Advances in Disease Surveillance (SDS) Vol 4*. 2007
6. **Machine Learning for Adaptive Power Management**
Georgios Theodorou, Shie Mannor, Nilesh Shah, Prashant Gandhi, Branislav Kveton, Sajid Siddiqi, and Chih-Han Yu. *Intel Technology Journal*, November 2006
7. **Fast Inference and Learning in Large-State-Space HMMs**
Sajid Siddiqi and Andrew Moore, *Proceedings of the 22nd International Conference on Machine Learning (ICML)*, August 2005
8. **An Experimental Study of Localization Using Wireless Ethernet**
Andrew Howard, Sajid Siddiqi and Gaurav Sukhatme, *Proceedings of the 4th International Conference on Field and Service Robotics (FSR)*, July 2003

HONORS AND AWARDS

- **Robotics Graduate Fellowship** (CMU) 2003-present
- **First Prize** at Annual USC Undergraduate Research Symposium, 2003
- **Outstanding Computer Science Graduate Award** (USC), 2003
- **USC Presidential Scholarship**, 1999-2003

COURSES

Machine Learning, Artificial Intelligence, Intermediate Statistics, Statistical Foundations of Machine Learning, Probabilistic Graphical Models, Computer Vision, Mathematics for Robotics, Graduate Algorithms, Machine Learning Theory

PROGRAMMING LANGUAGES

C, Matlab, C++, R, Java, Perl, shell scripts
