Hardik Goel

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EDUCATION

- **M.S. Computer Science**
  University of Minnesota, Twin Cities
  Advisor: Prof. Arindam Banerjee

  Sep. 2015 - May 2017 (Expected)
  GPA: 4.0/4.0

- **B.Tech. Electronics & Communication Engineering**
  Indian Institute of Technology, Roorkee

  Jul. 2007 - May 2011
  GPA: 7.6/10.0

SELECTED COURSES

Machine Learning	Artificial Intelligence (I, II)	Matrix Theory
Applied Parallel Programming	Advanced Algorithms and Data Structures	Intro to Compilers

PUBLICATIONS

- **H. Goel**, I. Melnyk, N. Oza, B. Matthews, A. Banerjee. "Multivariate Aviation Time Series Modeling: VARs vs. LSTMs", *SDM 2017* (Under Review).

RESEARCH EXPERIENCE

- **Inverse Reinforcement Learning for Anomaly Detection**   Nov 2016 - Present
  Technology: Python
  Description: Investigating an Inverse Reinforcement Learning based framework for anomaly detection in time-series aviation data.
- **Multivariate Time-Series Modeling with Deep Learning**   May 2016 - Oct 2016
  Technology: Python, Theano, Lasagne
  Description: Time-series forecasting on aviation data. Performed careful empirical comparison between Vector Auto-Regressive (VAR) and Long Short-Term Memory (LSTM) based models (standard LSTM and sequential autoencoders) for time-series prediction.

PROJECTS

- **Automatic Musical Chord Recognition**   Oct 2016 - Present
  Technology: Python, Scikit-Learn, Keras
  Description: Building a machine learning system for automatic chord recognition from raw audio. Exploring sequential models for exploiting chord-progression information.
- **C– Compiler**   Feb 2016 - Apr 2016
  Technology: C, Flex, Bison
  Description: Implemented all the parts of a compiler - lexical analyzer, parser, semantic analyzer, type checker and code generator - for a C-like language (without pointers).
- **Othello Game Playing Bot**   Dec 2015
  Technology: Python
  Description: Designed an AI system using adversary search algorithms and scoring heuristics to play the game of Othello. Also wrote a Tic Tac Toe game for humans to play against an unbeatable bot.

WORK EXPERIENCE

- **Cisco Systems**   Oct 2013 - Jul 2015
  Software Engineer II
  ○ Worked on board bring-up for new network adapters. Added support for 1G network speed and automatic firmware updates.

  ○ Refactored a command-line based tool for multiple host configuration as opposed to a single host earlier.
- **Cisco Systems**   Jul 2011 - Sep 2013
  Software Engineer I
  ○ Worked on remote booting using iSCSI to fix host crashes due to timing issues.

  ○ Created a tool in python for remote debugging of network adapter issues.