Niranjani PRASAD

PERSONAL DATA

DATE OF BIRTH:	21/07/1991	ADDRESS:	35 Olden Street
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RESEARCH INTERESTS: Machine learning methods motivated by clinical medicine, spanning reinforcement learning, time series modelling, natural language processing and knowledge representation.

EDUCATION HISTORY

SEPT 2015 - PRESENT	**Princeton University** PhD Candidate in COMPUTER SCIENCE | Advisor: Prof. Barbara E. ENGELHARDT Awards: *Francis Robbins Upton Fellowship in Engineering* (2015/16)
PROJECTS	**Reinforcement learning for weaning of mechanical ventilation in the ICU** This work aims to develop a decision support tool that utilizes available vitals and demographic information to learn an optimal, personalized regime of sedation dosage and ventilation for each patient.
CLASSES	Foundations of Probabilistic Modelling | Advanced Algorithms | Statistical Learning and Nonparametric Estimation | Connectomics | Stochastic Optimization | Advanced Networks
OCT 2009 - JUN 2013	**Christ's College, University of Cambridge** INFORMATION AND COMPUTER ENGINEERING (MA, MEng)
Part IIB (Year 4)	Honours with Distinction | Awarded the M.R. Lynch Prize for Engineering Computer Vision and Robotics | Robust & Nonlinear Systems and Control | Machine Learning | Signal Detection and Estimation | Statistical Pattern Processing | Speech and Language Processing | Computational Neuroscience | Management: Information Systems
	Master's Thesis | Advisor: Prof Elena Punskaya Design and implementation of an adaptive speaker recognition algorithm in a Chinese domestic service robot. Investigated various machine learning methods, and developed a signal processing and classification pipeline.
Part IIA (Year 3)	2.i (69%) | Awarded the Christ's College Exhibition Prize for Engineering Signals and Systems | Signal and Pattern Processing | Systems and Control | Computer and Network Systems | Data Structures and Algorithms | Mathematical Methods | Mathematical Physiology | Introduction to Neuroscience | Medical Imaging and 3D Computer Graphics | Management: Business Economics
Part I (Years 1 & 2)	Electrical and Electronic Engineering | Mechanics and Thermodynamics | Structures and Materials | Linear Systems & Control | Mathematics

PUBLICATIONS

- Williams W, **Prasad N**, Mrva D, Ash T, Robinson T (2015) *"Scaling Recurrent Neural Network Language Models"* IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2015)

TEACHING

FALL 2016	Teaching Assistant, Integrated Science Curriculum (ISC) 232 | Princeton University
MICH./LENT 2014	Supervisor, Part 1A Mathematics | Christ's College, University of Cambridge
MICH. 2013	Supervisor, Part 1A Electronics: Linear Circuits | Christ's College, University of Cambridge

Experience

Aug 2016	Attended the **Machine Learning Summer School '16** at Universidad Católica San Pablo in Arequipa, Peru. Had the opportunity to take part in workshops and lectures led by researchers at the forefront of their fields, both in industry and academia. Topics explored over the course of the two weeks ranged from Bayesian nonparametrics, optimization, counterfactual analysis and kernel methods, to deep learning and reinforcement learning.
Jun 2013 - Jul 2015	Information Engineer at **Cantab Research Ltd**, a start-up involved in the design and deployment of state-of-the-art automatic speech recognition, led by Dr. Tony Robinson. The role included exploring algorithms for the efficient processing of large, messy data sets, improving acoustic model training using deep neural networks, and building end-to-end systems, both for the cloud-based platform and tailored systems for clients, including a system for automated assessment of English speaking skills. Worked with both HTK and Kaldi speech recognition systems, and transitioned the company to the Kaldi framework. Also co-authored a paper during this time, on the scalability of recurrent neural network (RNN) based language modelling.
Jun - Sep 2012	Consultant at **Cronto Ltd** in Cambridge, which provides solutions for secure online banking. Worked on several different tasks, from iPhone and Android app testing & UI documentation, to developing web apps for internal testing and for use as a demo by potential clients, as well as updating the company website. Gained experience in a range of tools, including SmartSVN, the Jenkins build system, Java and Scala. Enjoyed the dynamic of the small, fast-moving start-up.
Jul - Sep 2011	Placement within the **British Airways** Intranet Services team, at their headquarters in Waterside, London. Completed two projects during this time, both for the Fuel Procurement Department. The first was a model for the calculation and management of fuel prices; the latter a decision support and optimization tool for the allocation of fuel suppliers to flights from London airports. The models were written in VBA for an Excel interface, and SQL was used to manage databases. Both models were successfully implemented and are now in use.
Jun - Jul 2010	Internship as part of the INVERT research program in the **University of Bath** Electrical & Electronic Engineering department. Was introduced to inversion problems, and involved in research into Electrical Impedance Tomography, to create wearable sensors for use in robotics. Set up a prototype EIT system, conducted tests to discern the system's limitations, and simultaneously attempted to optimize results, using Matlab. Compiled a report detailing these results, along with a short analysis, to be incorporated in a paper for publishing. Enjoyed working in the relaxed, friendly atmosphere, and having the chance to search for solutions independently.

Activities and Interests

- Graduate Liason for Princeton Women in Computer Science, involved in mentorship and outreach programs.
- Co-founder and Vice President ('11-13) of the Cambridge University Indian Classical Arts Society and Publicity Officer ('10-11) of the Cambridge University Hindu Cultural Society, a thriving society of over 500 members.
- Have been an active volunteer in past years, tutoring children at a local after-school care centre in the UK, as well as helping teach English, Maths and Science at understaffed schools during visits to India.

Additional Skills

Programming:	Python, C++, Java, Matlab, R, Bash, CSS/HTML, Javascript, VBA, SQL
Other:	MS Office, LaTeX, Pro-Engineer, Photoshop, Git/SVN, Jenkins (build automation)
Languages:	Strong English written, verbal skills; intermediate French; conversational Hindi, Tamil