

Aritra BISWAS

PERSONAL DATA

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EDUCATION

CURRENT Second year PhD track Graduate student in COMPUTER SCIENCE
Primary Interest: Machine Learning, Secondary(Minor): Systems
University of Wisconsin-Madison
Masters Graduation Data: Dec 2017

SEP '11-MAY '15 Undergraduate Degree in APPLIED MATHEMATICS and
COMPUTER ENGINEERING, **University of Wisconsin-Madison**

RESEARCH/WORK EXPERIENCE

Current	Graduate Research Assistant to Robert Nowak and Rebecca Willett at UNIVERSITY OF WISCONSIN MADISON Phenotype Electronic Health Care Data using sparsity and active sampling
FALL 2015/16	TA/Grader '15: CS532: Introduction to machine learning and pattern recognition '16: Math 521: Introduction to real analysis (Grader)
MAY-DEC 2014	Undergraduate Research Assistant to Benjamin Snyder Improved on the software package built by Joe Faith for Targeted Projection pursuit of gene expression data.
JUL 2012- MAY 2014	Undergraduate Research Assistant to Karu Sankaralingam Worked with Arduino microconntrollers to build preparatory material for the class In- troduction to Computer Engineering. Also served as a TA for an extra credit section of the class

SKILLS

Intermediate: Assembly coding, Arduino, Embedded Systems, Networks, LINUX
Comfortable: Python, C, Operating Systems, JAVA, Javascript,HTML,CSS MATLAB,

RESEARCH ORIENTED PROJECTS

- **Adversarial PCA:** Where should an adversary place an outlier of a given magnitude, in order to maximise the error of the subspace estimated by PCA? We give the exact location of this worst possible outlier, and the exact expression of the maximum possible error. **Submitted to International Symposium for Information Theory, 2017.**
- **Triplets:** An experimental analysis of convergence rates for non convex and projection free methods to solve the Triplets problem i.e recover the exact embedding of points from ordinal constraint information. Also popularly known as non metric multidimensional scaling.

- **Durian:** An experimental framework to allow scientist to directly query subjects' 2D mental models of a collection of objects. Completely re-implemented the software package written by Joe Faith for Targeted Projection Pursuit to make it portable on the web and easier to add new algorithms and sampling methods.
- **Hands on Introduction to Computer Science at the Freshmen level:** This project/ paper details the creation of a hands-on introduction course that reflects the dramatic growth and diversity in computer science. Our aim was to enable students to get an end-to-end perspective on computer system design by building one. **Accepted at SIGCSE, 2014**

SOFTWARE DEVELOPMENT PROJECTS

- **NEXT:** Contributor to NEXT - an open source distributed system for real time active learning built at the University of Wisconsin-Madison. Next is currently being used by the New Yorker for their caption contest.
- **Wanderlust:** A class project where I used a set cover based approach to build a system that recommends travel destinations based on the travel interests of the travel party. Won award for top five class projects.
- **Baseball Hall of Fame:** An interactive web-page with a machine learning classifier on the backend, that predicts if a baseball player will make it to the hall of fame or not. Also let's user perform exploratory data analysis on baseball.
- **Lumos: The Smart Switch:** As our undergraduate senior design project, we designed a smart light switch that worked via wi-fi, infra-red and had a sound sensor
- **Asteroid Avoiders:** We made a retro version of Space Invaders using an ARM micro-controller for a class project.

INTERESTS AND ACTIVITIES

Football(Soccer), Travelling, Climbing, Long Distance Running