ANU RAJ PRADHAN

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Motivated and goal-oriented professional looking for a challenging position in Data Science

A. EDUCATION

Georgia Institute of Technology, Atlanta, USA **Jan 2014 – Present**
Online MS in Computer Science, *Major: Machine Learning.*

Carnegie Mellon University, Pittsburgh, USA **Jan 2005 – Aug 2009**
PhD in Civil Engineering, *Major: Computer Aided Engineering, Focus on Machine Learning and Data Fusion. GPA:- 3.76/4.0*

North Carolina State University, Raleigh, USA **Aug 2001 – Aug 2003**
MS in Civil Engineering, *Major: Computer Aided Engineering, Minor: Geographic Information Science GPA:- 3.88/4.0*

Punjab Engineering College, Chandigarh, India **Aug 1995 – Jul 1999**
B.Eng. (1st Division Honors) in Civil Engineering

B. PATENT

Planning-Based Automated Fusing of Data from Multiple Heterogeneous Sources, US 20130124561 A1 (http://www.google.com/patents/US20130124561?cl=en)

C. EXPERIENCE

DREXEL UNIVERSITY, PHILADELPHIA, PA **Sep 2009 – Dec 2014**

Assistant Professor, Dept. of Civil, Architectural and Environmental Engineering

- Mentored a number of research teams that analyzed different transportation datasets (using different network analysis tools), and satellite images (using various computer vision algorithms).
- Implemented existing Adaboost and Bagging algorithms to classify airborne LIDAR dataset. The algorithms achieved an improvement of 10% over existing classification algorithms.
- Devised efficient implementations of parallel graph algorithms to run on parallel machines.
- Obtained a number of research grants from National Science Foundation, Federal Highway Administration, and other institutions (around $200,000).

CARNEGIE MELLON UNIVERSITY, PITTSBURGH, PA **Jan 2005 – Aug 2009**

Graduate Research Assistant, Civil and Environmental Engineering

- Designed a novel set of graph-based algorithms to fuse data from multiple geospatial and temporal sources to support productivity analysis. The US patent office granted a patent related to this work.
- Implemented machine learning (e.g., KNN) and state-estimation (e.g., Kalman filter) algorithms to facilitate indoor navigation. Based on the research findings, the research team obtained a grant (approx. $200,000 from US Army Research Center).

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/MODISIT **Oct 2003 – Dec 2004**

GIS Consultant, Geographic Information System (GIS) Unit

- Led the design of object-oriented road data model for NCDOT. The new data model supported the geo-spatial data needs (related to transportation network) of North Carolina.
- Authored software design and implementation guidelines that can facilitate structured software development at NCDOT GIS Unit.

NORTH CAROLINA STATE UNIVERSITY **Jan 2002 – Aug 2003**

Graduate Research Assistant, Civil and Environmental Engineering

- Designed and implemented three-tier GIS-based disaster management system to study the damage caused by World Trade Center disaster to the surrounding buildings. The research findings were awarded with an additional research funding (approx. $50,000) from National Science Foundation.

LALITPUR FINANCE LTD **Aug 1999 – Jun 2001**

Software Developer and Analyst, Finance and Marketing Department

- Developed information portal (intranet) to support communication applications (e.g. messaging, chat). The responsibilities included software design, coding and database design.
- Performed market analysis using a GIS software. Spatial analysis tool (i.e., clustering) was used to cluster different types of clients.

D. RELEVANT SKILLS AND CERTIFICATIONS

QUANTITATIVE SKILLS

Statistical Analysis and Machine Learning Techniques:
Regression analysis (both parametric and non-parametric regression), Probabilistic Graphical Models (e.g. Bayesian Network, Kalman Filter, Hidden Markov Model), Dimensionality Reduction and Pattern Recognition (PCA, KNN, non-linear dimensionality reduction techniques), Bayesian Statistics, Sampling Techniques (e.g. Gibbs sampling, Metropolis Hasting, Monte Carlo, Importance sampling), Support Vector Machine, Neural Network
Familiar with Numerical Methods:
Linear Programming, Integer Programming, Convex Programming, Stochastic Optimization

COMPUTER SKILLS

Certification: Sun Certified Java Programmer (obtained on August 2005)
***Programming Languages*:** Python, Java, Matlab, R, SQL
Database Systems: MySQL
Parallel Computing Platforms: OpenMP and MPI
Geographic Information Systems: ArcGIS ArcInfo
Modeling Languages: Unified Modeling Language (UML), Entity-Relationship (ER) Modeling Laguage

E. RELEVANT ACADEMIC GRADUATE COURSES

Computer Science, College of Computing at Georgia Institute of Technology
Machine Learning, Software Development Process, Artificial Intelligence in Robotics
Machine Learning Department, School of Computer Science at Carnegie Mellon University
Statistical Foundation of Machine Learning, Intermediate Statistics, Multimedia Database and Data Mining, Computer Vision, Applied Bayesian and Computational Statistics, Algorithms in the Real World
Carnegie Institute of Technology at Carnegie Mellon University
Probability and Statistics for Engineers, Fundamental Concepts of Computing for Engineers, Introduction to Computer Aided Instrumentation, Advanced Database Management, Data Warehousing
North Carolina State University
Computer Methods, Information Technology and Modeling, Introduction to GIS, Computer Aided Engineering Systems, Database Management, Advance Topics in Civil Engineering – High Performance Parallel Computing, Advance Topics in Computer Science – Semantic Web Service

F. PROFESSIONAL DEVELOPMENT (COURSERA ONLINE COURSES)

- **Stanford University**: *Machine Learning*
- **John Hopkins University**: *The Data Scientist's Toolbox, R Programming, Getting and Cleaning Data, Statistical Inference, Exploratory Data Analysis*
- **University of Pennsylvania:** *Networked Life*
- **University of Michigan at Ann Arbor:** *Social Network Analysis*

G. ACADEMIC HONORS AND AWARDS

- Merit Based Colombo Plan Scholarship (August 1995 - June 1999) to pursue undergraduate degree.
- Gold Medal for standing 7th (all over Nepal) in School Leaving Certification Examination.