Avinash P. Kambil

CONTACT

218-A, Sterling Park
Kodigehalli Main Rd
Bangalore – 560 092

avinash11@gmail.com
MOB: 9448050948

SKILLS

- Constructing mathematical and statistical models.
- Performing data analysis and building machine learning systems.
- Applying algorithms and performing complexity analysis.
- Thorough knowledge of probability and statistics.
- Web Scraping to gather data.
- Using GIS to visualize, question, analyze, and interpret data.

PROGRAMMING LANGUAGES & TOOLS

- Programming Languages:
  - Python, R, Octave,Shell scripts, MySQL, HTML, C, ArcGIS.
  - Knowledge of JSON and MongoDB to extract, store and manipulate information.
- Tools
  - Emacs, Jupyter, RStudio, ShinyR.
  - SciKit Learn, OpenCV, NLTK (other required libraries in Python and R)

QUALIFICATIONS

Coursera Certificate Courses

- Machine Learning: Stanford University - Dr. Andrew Ng
- Data Analysis: Johns Hopkins University - Dr. Jeffery Leeks
- Model Thinking: University of Michigan - Dr. Scott E. Page
- GIS : Penn State University - Dr. Anthony Robinson

ACM Professional Member

EDUCATION

Masters in Mathematics — July 1994 — April 1996

University of Hyderabad

All India Entrance Topper at Masters Level.
NBHM Summer school at IIT-Bombay and winter school at University of Bombay/TIFR on Geometry and Analysis.

Bachelors in Mathematics (Hons) — July 1991 — April 1994

St. Xavier's College, Mumbai University

Honors Projects specializations in Geometry and Topology.

WORK EXPERIENCE

RareMile Technologies — Feb 2015 — Present

Data Scientist / Data Architect

- Customer Personalization for Credit Card offers given by MayBank
  - Requirement Gathering and Feature Engineering for building models
  - Real time solution provided using Oracle RTD
- Automatic labeling of electronic goods for inventory
  - Build supervised learning models
    - Details, description and Item code of electronic goods are provided
    - Analysis of description done using NLTK
    - Models built using Bag Of Words, tf-idf and Perceptron with SGD training
    - Build a 92% + accuracy provided
- Built Recommender Systems
  - Standard UBCF with a custom definition for ratings
  - Ensemble Recommender System

Independent — Jan '13 — Feb '13

Data Scientist

- Data analysis:
  - Feature Engineering to best classify Human Activity from phone sensor data - *Dataset:*http://archive.ics.uci.edu/ml/datasets/Human+Activity+Recognition+Using+Smartphones.
  - Report preferences / relations among U.S. adults in following various media for national political news prior to 2012 elections. - *Dataset:* The ANES 2012 Time Series Study. Stanford University and the University of Michigan [producers].
  - VIsualize unemployment change per state in the U.S. before and after the 07-08 economic crisis. *Data:* Bureau of Labour Statistics.
- GIS based data analysis:
  - Create layered maps (ArcGIS) to:
    - Identify and represent major Earthquakes (6.0 >), their locations, depth and neighborhood population. *Data:* USGS Earthquake Hazards Program.
    - Identify and showcase sites of historical interest in Keraladating frommegalithic period to late 18th century. *Data:* ASI (esp Thrissur Circle), Wikipedia, Private sites.
    - Study and report changes to Bangalore vegetation from 1990 - 2010, using LandSat imagery.
  - Implemented code in Python:
    - To use k Nearest Neighbour on a handwriting recognition system.
    - Perform K-means clustering to cluster points on a map.
  - Built Classifiers for :
    - Human Activity Recognition (HAR) using Weight Lifting Exercises. *Dataset:*http://groupware.les.inf.puc-rio.br/har (Benchmark accuracy ~ 78%)
      - Algorithms used: kNN, and Random Forests.
      - Preprocess with PCA.
    - NASA SHUTTLE Dataset (STATLOGVERSION) *Dataset:* https://archive.ics.uci.edu/ml/datasets/Statlog+(Shuttle) (Benchmark accuracy ~ 80%)
      - Comparative study of Algorithms:
        - Algorithms compared: kNN (~86% Acc), Random Forests (99.8%), SVM (~95%)

TE Connectivity, Bangalore — Jan '11 — Mar 13

Technical Lead

- Designed state machines and timing models to predict failures in a cascaded network.
    - Model based predictions reduced on device testing by 50%.
- Analyzed Performance Test results for large scale product deployments.
    - Failure prediction model improved test coverage by 25%.
- Designed a SW upgrade mechanism to reduce failure and manual intervention, provide complete recovery and useable feedback.
    - Proposed mechanism reduced human intervention by 90%.
- Reviewed code design for modularity and scalability compliance.

ADC (India), Bangalore — Jan '10 — Dec '10

Lead Engineer

- Identified design anomalies in existing software to improve code reuse.
    - Modularization simplified adding new operating frequencies to two-line code additions.
- Presented designs to improve scalability 32 fold.
- Developed and maintained User Account Management and Back Up/ Restore features.
- Fixed issues of GUI design for user friendliness.

ADC (India), Bangalore — April '06 — Dec '09

SW Engineer

- Modelled circuit switched boards as state machines to identify the optimal routing strategy under various loading conditions.
    - Model used by Sales to demo efficient product use.
    - Model used to predict bottlenecks in a given design.
- Reduced Average Time to connect by 50% using biologically inspired algorithms for route searches.
- Improved connectivity in back-plane wiring by 66% by using superior geometry.
- Wrote a handbook of best practices for routing and setting layout.

Dept. of Mathematics, Michigan State University — August 98 — April 04

Graduate Assistant

- Taught Mathematics to Undergraduate Students.
    - Basic Algebra, Undergraduate Algebra, and Business Calculus. Geometry for Math Education.

College of Osteopathic Medicine, Michigan State University.

Assistant to the Director of Technology

This work experience was gathered during summers of the above job.

- Inventory management and maintenance.
- Provide technological assistance to medical students, troubleshoot audio/video hardware and software.
- Interact with vendors and recommend technical equipment.