Madhavan Pallan

Contact Information	TF02, IBM India Research Lab. Plot No.4, Phase II, Block - C, ISID Campus. Institutional Area, Vasant Kunj. New Delhi - 110070,India.	Phone: (+91) 8800996753 E-mail: madhpallan@gmail.com http://madhavanpallan.github.io/

Interests

Deep Learning, Machine Learning, Large Scale Data Mining, Artificial Intelligence and Social Network Analysis.

Education

IIT-(BHU), Varanasi, Uttar Pradesh. India — July 2008 – May 2013
Integrated Masters Degree - Mathematics and Computing — (DGPA 8.08/10.0)**(Honors)**

Professional Experience

***IBM India Research Lab*, New Delhi. India.** — July 2013 – Present
Research Software Developer

Google Summer of Code — May 2012 – September-2012
Research Program

Advant Technologies and Inc. — May 2011 – June -2011
Summer Intern

Awards and Fellowships

Received **IIT(BHU)-Color 2012**, highest award for outstanding contribution in the field of Robotics.
Awarded **Western Railway Union Medal 2013**, for being in top 5 students in a category given by Western Railway, Indian Government.
Recipient of **MHRD Scholarship, 2012 - 13** for good academic performances.
Recognized by **Student Leadership Award 2012**, for showing exemplary leadership skills in conducting and organizing workshop.
Stood **Third** in SANRACHNA a model building competition in Departmental Fest Anveshan 2011.
Recipient of **Western Railway Scholarship 2010 - 12**, for maintaining SGPA greater then 8.
Received **Merit-cum-mean Scholarship 2008 - 10 :**, given to top 25% Undergraduate meritorious student in whole of IIT.

Projects

Predictive Talent Mobility — January 2014 - present
- PTM short for Predictive talent Mobility is a Enterprise Project by the Business Analytics and Mathematical Sciences group at IBM India Research Lab.
- A tool that revolutionizes the recruitment of a candidate for a given Job, by calculating various scores.
- A Final Product on the overall basis is a combination of three views namely Employee, Hiring Manager and HR Manager View and each view performs its own analytics to show the best of data provided.
- Developed Database schema in IBM DB2, visualization of data using D3 an opensource tool for the end product.
- **Full Research Paper Published : 1, Paper Under Review : 1**
  - A Bhowmik, V Borkar, D Garg, M Pallan, "Submodularity in Team Formation",*In Proceedings of the Fourteenth SIAM International Conference on Data Mining at SDM Conference*, 2014 **(SDM'14)**
  - M Pallan, B Srivastava, "Automatically Augmenting Titles of Research Paper for Better Discovery" **Under Review**

City Concierge *PPT*   April - June 2014
- Developed a tourism guide application, which helps the travellers by showing the events with less number of issues with the help of a clustering algorithm.
- Part of Development Team Smarter Planet, and developed City-concierge and Bharat-Khoj.
- Under the mentor-ship of Dr. Biplav Srivastava, Master Inventor, ACM Fellow, IBM India Research Lab.
- The application lists events, for given stipulated date.
- Api used follow open311 standards, and provided support for four countries namely amsterdam, lisbon, helsinki and Lamia.
- Deployed the web application on IBM Bluemix
- Developed the **Best Cross-City Smart Participation Application**.
- **Runner up** in CitySDK Challenge and bagged a sum of 3000 €.
- **Tools** : Html, javascript and css
- **Programming Language**: Java
- **Patents : 1 (Under Process)**

IBM Consumer Analytics Competition 2014   April - May 2014
- **Third** in IBM internal Machine Learning Competition, having teams participated from all Geographical Research Labs of IBM.
- Under the mentor-ship of Dr. Biplav Srivastava, Master Inventor, ACM Fellow, IBM India Research Lab.
- **Tools used:** such as R, weka and IBM Cognos were used for the analysis of the dataset,
- **Methods:** Expected Maximization, Clustering and Pearson Correlation.

Integration of Leptonica library in Siptoolbox (M-Tech Thesis) Dr. Tanmoy Som and Dr. Ricardo Fabbri
- The thesis is an extension of work done in Google Summer of Code'12.
- Comprises of the various challenges encountered in making leptonica library available to Scilab through siptoolbox (Scilab Image Processing ToolBox).
- Involved designing and developing intermediate functions, which formed the fundamental blocks for making leptonica functions available to Scilab.
- Sample functions like deskew and dewarp, having state of the art algorithm found in leptonica were now made available through siptoolbox
- Extensive testing of the made available functions were done on different types of images like, jpeg, png and tmp.
- Complete change called (sip-gsoc) is now part of SIP ver 0.10.0.

Google Summer of Code (Internship)*Proposal Abstract*   May 2012 – September-2012 *Link*
- A Research Program to help develop large Scale OpenSource Organization. Here, we were working with free and open source software for numerical computation providing a powerful computing environment for engineering and scientific applications, *Scilab*.
- Internship aimed at making Google-books leptonica library available to **Scilab** using *SIP ToolBox* (Scilab Image Processing ToolBox).
- Under the mentorship of **Dr. Riccardo Fabbri** from Rio-de-Janeiro State University.
- Porting Functions made leptonica functions available in siptoolbox. As, part of the verification two functions dewarp and deskew which are exclusively available in leptonica, were made available in Scilab.
- IIT-BHU was Ranked **6th** for number of accepted students in 2012 , and **10th** in #students accepted from 2005 - 2012.
- Closely worked with two opensource Organizations **#scilab** at irc.oftc.net and **#labmacambira** at irc.freenode.net from October 2011 to September 2012

Line Follower Robot   May 2011 – June -2011
- Developed a algorithm to solve the problem of following white lines on black painted surface and performed a task of collecting blocks from the intersection point of the 4x4 grids to the end point of the grid.
- Built a 4 wheeled Robot, and programmed the Micro-controller.
- Qualified the first round and Participated at Techniche, Technical Fest of IIT-Guwahati.
- **Tools used:** CvAVR, AVR USB Programmer.
- **Hardware used:** IR Sensor kit, 4 wheeled robot, Atmega Circuit.

Smart Furnace Alerter   May 2011 – June -2011
- Developed a program, solving real world problem that regulates the temperature of the Metal Furnace, taking the reading from the furnace with the help of thermostat and providing readings to the micro-controller. The reading was then used to alert the workers working in factory with the help of a buzzer and displaying alert on 16x2 LCD.
- Teamed with Er. Manikandan Mariyappan of the Metallurgical Department.
- Stood **Third position in SANRACHNA**,a model building event in the Metallurgical Departmental fest Anveshan.
- **Tools used:** CvAVR.
- **Hardware used:** RS 232 Programming interface, LCD, Thermostat.

Sale Invoice for Retail Point of Sale   May 2011 – June -2011
- Developed a windows Application for demonstrating Billing of products using a Scanner, later integrated in an Enterprise Application
- Carried under the supervision of Project Manager **Mrs. Deeksha Hegde**.
- **Tools used:** Visual Studio 2010, MySQL.

TECHNICAL SKILLS **Programming and Scripting Languages**: C, CPP, R, Python, Java, SQL, HTML, XML
Operating Systems: Windows, Linux
Tools: IBM Cognos Business Intelligence Server, IBM WebSphere Studio, Weka, R, Vim, Latex, Subversion, Git, Matlab, D3, Tomcat, Gephi, IBM SPSS Modeler
Database Tools: Oracle, MySql, DB2, MS-Access

ROLES,
RESPONSIBILITES &
ACCOMPLISHMENTS
- Reviewer for SADHANA'14 *Academy Proceedings in Engineering Sciences*, an official journal of Indian Academy of Sciences.
- Donated Blood twice as part of the blood Donation camp in the year 2013.
- Conducted and Organised workshops for students of every year in Robotics.
- Mentored over 30 teams in development of Robotics and Programming Projects.
- Joint Secretary in Robotics Club, IIT Gymkhana in the year 2011.
- Organiser, Mentor and Lead for the Event Modex 2011, part of Technical Festival at IIT(BHU) TECHNEX 2011
- Technical Head for the Technical Festival at IIT(BHU) TECHNEX 2012
- Completed **C and B** certification in training for National Cadet Corps.

PAPERS

REFERENCES   Available upon request.