CHIRAG NAGPAL

Army Institute of Technology ⋄ Pune-15, Maharashtra, India
(+91) · 940 · 3858944 ⋄ chiragnagpal_12102@aitpune.edu.in
www.chiragnagpal.com

EDUCATION

University of Pune, India   2012 - 2016
Bachelor of Engineering (Computer Engineering), 6th Semester
Overall Percentage: **81%** (WES CGPA: **3.9/4**), **First** Position in Department

Delhi Public School, Jaipur   2010 - 2012
CBSE, Class XII (Physics, Chemistry, Mathematics, Multimedia and Web Technology)
Percentage: **94%** , **Second** Position in Class

St. Joseph's Convent School, Pathankot   2008 - 2010
CBSE, Class X (Science, Mathematics and English)
GPA: **10**

SCHOLASTIC ACHIEVEMENTS

· IET Scholarship Award, West Zone Winner, 2014 (Awarded to Top 5 students across India)
· Science Academies' Summer Research Fellowship, 2014 at IISc, Bangalore
· Sir Ratan Tata Memorial Scholarship, for standing 1st in Computer Department, 2014 & 2013.
· Merit Scholarships by Indian Army for excellence in academics in the years 2014, 2013, 2012 & 2010.
· Selected for INSPIRE, Innovation in Science Pursuit for Inspired Research program, Rajasthan University, 2010.

INTERNSHIPS AND RESEARCH

Carnegie Mellon Univeristy   Dec 2014
IPTSE Winter School 2014 at NIT Karnataka, Surathkal
· Guide: **Prof. Bhiksha Raj & Prof. Rita Singh**, Carnegie Mellon University
· Project: **'What impact does an image generate on social media?'**.
· Applied Kernel Density Estimation to analyse seasonal variation in geo tagged Flickr images.
· Worked on ARMA models to predict growth of comments and ads in Flickr.
· Carried out sentiment analysis of comments stream using Naive Bayes classifier trained on movie reviews.
· Extracted Topical Models from image tags using Latent Dirchlet Allocation.

Indian Institute of Science, Bangalore   Nov 2014
Winter Research Intern, Supercomputer Education and Research Center
· Guide: **Padmashree Prof. N. Balakrishnan**, Associate Director, Indian Institute of Science
· Project: **'Density based clustering of Topically Modelled Microblogs'**.

Indian Institute of Science, Bangalore   May - July 2014
Science Academies' Summer Research Fellow, Supercomputer Education and Research Center
· Guide: **Padmashree Prof. N. Balakrishnan**, Associate Director, Indian Institute of Science
· Project: **'Application of Machine Learning Techniques for Twitter User Classification'**.
· Developed Python scripts for Tweet mining using Twitter REST and Streaming API.
· Utilised NLTK and SciKit to implement algorithms like Decision Trees, Naive Bayes and SVMs
  on features like discription, followers, friends.
· Presented results to Hon'ble Governor of Andhra Pradesh and Telangana, **Shri. E.S.L Narasimhan**.

Netaji Subhas Institute of Technology, New Delhi   Dec 2013 - Jan 2014
Student Mentor, Texas Instruments Centre For Embedded Product Design
· Guide: **Prof. DV Gadre**, Associate Professor, NSIT, New Delhi
· Mentored undergraduate students from leading universities in India on TI Microcontrollers.
· Trained students on software packages, CadSoft EAGLE and TI Code Composer Studio.
· Guided students with embedded system projects on TI MSP430 and ARM Cortex M4.

PROJECTS

Exploring the Language of Likes in Facebook   Sep - Oct 2014
· Developed Python scripts to extract 'likes' from Facebook user profiles and pages using the Graph API.
· Utilised networkx python to generate massive graphs from stored data.
· Utilised Gephi to generate visualisations using OpenOrd, Yifan Hu, Force Atlas etc. algorithms.

Spatio-Topical Modelling of Tweets from India   Aug - Sep 2014
· Utilised 'R' packages, 'tm' and 'topicmodels' to carry out topical categorisation of a corpus of over 400,000 geo-located tweets by applying Latent Dirichlet Allocation.
· Topic wise visualisations of tweets were generated using package 'mapdata'
· Currently, implementing a fuzzy geographical clustering algorithm based on DBSCAN for topical clustering.

Wireless Environment Sensing Network with IoT extension   Mar - Apr 2014
ARM Cortex A8 (BeagleBone Black), MSP430
· Developed an environment sensing node with LM35, DHT11, LDR interfaced to MSP430 and XBee.
· Coordinator node was developed on ARM A8 based BeagleBone Black serving as an Intenet of Things server.
· Frontend was developed as a webpage, served by coordinator using processing.js with backend in Python.
· Work was featured on leading electronics blog, **Hack A Day**, **Dangerous Protoypes**,
  Official MSP430 Blog and stood 1st in **'Amalgam'** college project competition, 2014

GPIO Access Through Linux User Space   Nov - Dec 2013
ARM Cortex A8 (BeagleBone Black)
· Implemented a novel technique of GPIO access using the Linux mmap() system function and /dev/mem.
· Studied the architecture of the TI AM3359 ARM A8 Controller with special regard to GPIO addressing.
· Achieved a GPIO toggle rate of over 2MHz as compared to the standard 3kHz speed.
· Work was featured on leading electronics blog, **Hack A Day**.

***Complete details of other projects at* www.chiragnagpal.com/projects.html**

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Java, Shell Scripting, R, Latex, Qt, Processing
Platforms	x86, Arduino, MSP430, ARM Cortex M4, ARM Cortex A8
Operating Systems	Unix, Linux, Embedded Linux, Windows
Tools	NLTK, WEKA, EAGLE, Eclipse IDE, Xilinx ISE, GIMP

PUBLICATIONS

· Reviewed *'Getting Started with Electronic Projects'* by Bill Pretty, *PACKT Publishers, UK* ISBN: 9781783554515
· **C. Nagpal**, K. Singhal, 'Twitter User Classification Using Ambient Tweet Metadata', Arxiv

OUTREACH

Have been featured multiple times on leading websites, links below:
· http://hackaday.com/2014/04/06/hackaday-links-april-6-2014/
· http://dangerousprototypes.com/2014/03/31/beaglebone-black-and-msp430-based-wireless-sensing/
· http://hackaday.com/2013/12/07/speeding-up-beaglebone-black-gpio-a-thousand-times/
· http://dangerousprototypes.com/2013/12/18/laser-pointer-controlled-with-a-pc-mouse/01111

AWARDS AND ACHIEVEMENTS

· 1st position in 'Amalgam', alumni sponsored project comepetition, AIT Pune, 2014
· Selected for MIT Media Lab DIY Workshop, India, 2014 (could not attend due to University Exams)
· All India Rank 5, 'National Creativity Aptitude Test', 2013
· All India Rank 41, National Defence Academy Services Selection Board, 2012 conducted by UPSC.
· Selected for INSPIRE, Innovation in Science Pursuit for Inspired Research program, Rajasthan University, 2010.

EXTRA CURRICULAR

· Student Member, IEEE
· Qualified Amateur Station Operator's Certificate Exam (HAM Radio)
· Open Source enthusiast and contributed to the Angstrom Linux.

· Attended workshop on 'Creativity and Achievement Motivation' at IIT, Delhi after qulifying NCAT, 2013.
· Board Member, College Magazine, 'Srijna' and Team Member of College Quiz and Debate Club.
· Hobbies include Horse Riding, Swimming, Basketball & Golf.