Vihari Piratla

Computer science graduate applicant

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http://vihari.github.io/personal_website

Objective

Graduate school admission in a doctoral programme in the field of Computer Science and Engineering, followed by a career in research.

- **Research interests:** Information extraction, Information management, HCI, Context-aware computing and Intelligent interfaces.

Education

- **Indian Institute of Technology, Mandi** — Mandi, India
  BTech. in Computer Science and Engineering; **CGPA:** 8.34/10 — Aug. 2010 – Present
  - Major: **Computer Science and Engineering**

Research Experience

ePADD — Stanford University Libraries

Aug 2014 – Ongoing

- ePADD is a **National Historical Publications and Records Commission** funded project to develop an open source software for collecting and processing of emails from individuals. ePADD consists of features for information extraction, named entity disambiguation, entity resolution among various other features in order to ease the process of archiving of any digital content, which would otherwise take months if not years by archivists.
- **External links**
  - An interview on the features of ePADD which also includes some of the features I worked on is featured in Library of Congress blog here.
  - A detailed description of my work can be found in this draft

Bspoke — Amuse Labs

Jun 2014 – Ongoing

- Bspoke is a generic profiler with user-controllable profile. Bspoke builds user-profile starting from user's data/social profiles such as Facebook, LinkedIn, Twitter, Emails, Browser history, Personal website(s) and Local files; profile building is then followed by Wikipedia based disambiguation and topic expansion. The profile can be used across various computing devices for news recommendation, information discovery, news curation.
- **External links**
  - Entry of Bspoke in Knight News challenge can be found here.
  - Links to mini-version and full-version of software

Registration of Ultrasound and MRI images — Guide: Navneet Subramanian

GE Global Research, Bangalore — Jun 2013 – Aug 2013

- Implemented system described in ICRA 09 titled Fast Point Feature Histograms (FPFH) for 3D registration. I also worked on removing certain types of distortions from ultrasound images, which involved plane detection thresholding and vessel segmentation (Frangi vessel detection).

Autonomous Unmanned Aerial Vehicle [AUAV]

IIT Mandi — Sep 2011 – Aug 2012

- Assembled an aerial vehicle capable of navigation in GPS denied indoor environments. I was the lead of the project, which then received a grant of 200,000 Rs. Problems like *visual odometry*, *SLAM (Simultaneous Localization and Mapping)*, *collision avoidance*, *pen-drive detection in images* were addressed along with other hardware and system issues with Kinect Sensor.

Employment

- **Amuse Labs** — Dharwad, Karnataka
  Research member staff — Jun 2014 – current
- **GE Global research** — Bangalore, Karnataka
  Research intern: Medical Imaging — May 2013 – July 2013

Publications

- Sudheendra Hangal, Vihari Piratla, Chaiyasit Manovit, Peter Chan, Monica Lam, Glynn Edwards,"Historical Research Using Email Archives in Special Collections" [accepted at CHI 2015 Case Studies]

Development Experience

- **Touch Screen Projector** — Academic project
  IIT Mandi — Feb 2012 – Apr 2012
  - Touch screen projector is a software that enables interaction with a computer connected to a projector from the projection surface, one can click, double click, draw and scroll on the projection surface just the way one would on a touch screen. The only hardware requirements are led light, computing device with webcam, projector and windows operating system. The total cost of the product is as low as 100 Rs, in comparison with other similar products which cost at least tens of thousand rupees. **This project also bagged first prize in open-house of related course among 20 other teams.**
  - **External links**
    - A demo of the product can be found here.
- **Gesture Recognition** — Guide: Prof.Hema Murthy
  Pattern Recognition course — Oct 2012 – Nov 2012
  - Real time gesture recognition from webcam video feed with Support Vector Machines (SVM). This involved skin color detection, de-noising, active contour extraction(for data compression), K Means clustering and classification of gestures with SVM. Accuracy close to 90% was observed with the least confusion set of gestures.

Positions of responsibility

- Google Student Ambassador, IIT Mandi, 2012 – 2013.
- Technical Secretary, IIT Mandi, 2012 Spring.
- General Secretary, Suvalsar hostel, IIT Mandi 2010 – 2011.

Achievements & Awards

- Our team was selected for ACM-ICPC (International Collegiate Programming Contest) 2012-2013 Kharagpur regional and 2013-2014 Kanpur regional from IIT Mandi
- I won First Prize in Design Practicum course open-house 2012 for the project Touch Screen Projector among 20 other teams
- I was among the top 300 students who qualified for the Indian National Mathematical Olympiad (INMO) after clearing Regional Mathematical Olympiad (RMO) '09 with a state rank of 26
- I secured a rank of 3600 among 400,000 students in the Joint Entrance Examination (JEE)
- I received various scholarships that waived my tuition fees for five years during my schooling

Skills

- **Languages:** Java, C/C++, R, Perl, Bash, HTML, CSS, JS, JSP
- **Operating Systems:** Proficient in Linux environments; Comfortable working with Atmega micro-controllers
- **Software:** OpenNLP, Stanford JavaNLP, ROS (Robot Operating System), OpenCV (Open Source Computer Vision), PCL (Point Cloud Library), d3, jquery