Apurva Gupta

Mobile : +91-9008043582
Email : apurvagup@gmail.com

Educational Qualification

Integrated Masters in Mathematics and Scientific Computing from IIT Kanpur 2006-11

Employment

Bloomreach Data Sciences(Bengaluru, India) Staff Engineer (2016-now) / MTS (2013-2016)

Partially responsible for improving relevance and ranking on search websites powered by Bloomreach. Worked on analysis of clickstream data and design of algorithms and systems. A few highlighted projects were :

- **Learning to match text and images using Deep Networks :** Working on eliminating manual work required to tune relevance on search engines by using deep networks. Current network can learn similarity of phrases of different grammars (e.g. queries & documents). To improve relevance when text data is noisy, it also uses image information of product. Network is implemented in Keras,Tensorflow and scales to 100k similarity queries/s.
- **Transfer learning of ranking :** Mine associations such as (keyboard, logitech) from traffic associations and use them for different purposes such as restricting recall or ranking products on websites with no user data.
- **Synonym Generation :** Designed, implemented and patented an algorithm to automatically resolve recall issues by mining feedback from click through logs. (Blog) (Patent)
- **Technology and Languages**: Python, Java, Spark, Tensorflow, Keras

PayPal R&D Labs, Software Engineer, (Chennai, India) 2012-13

Design and develop future products relevant to payments using state of art in technology

- **Card-io** (Detect debit and credit cards numbers from their images) : Developed an algorithm that made **Card-io 87% more robust** to rotation and translation of cards. **Designed a card and distortion simulator** to measure improvement in accuracy
- **Face recognition and verification :** Designed and implemented a scalable face verification and recognition system **for web browsers**. Used **LBPH features classified by SVM's** chosen on basis of light , noise and color of face by another RFC
- Conceptualized and implemented a **new way to create captchas motivated by crease in crumpled clothing**
- In a team of 4, **developed call/sms based payment solution** for phones using PayPal public APIs

Entrepreneurship

Co-Founder at **Computer Human Interaction Labs** 2011–12

- Co-founded a company that **designs and prototypes devices enabling people with physical disability**
- **Designed 2 products**(Eye Mouse and Customizable Keyboard) utilizing **computer vision, machine learning**
- **Led a team of 9 students** for 6 months, trained them in programming and image processing
- **Conceptualized low cost design** of Eye Mouse targeted at Indian Markets

Publication

Human-Computer interaction via head and eye movements by A.Gupta, R.Shanker, M.Nawhal

Accepted for presentation at **IBM Collaborative Academia Research Exchange (ICARE-2011)**

- Proposes a faster technique to detect eye ball location in real time with low resolution cameras
- Suggests a new bi-level approach to control cursor movements in response to head and eye position

Master's Project

Proof Search and Tableaux 2010–11

Supervisor : Dr. Mohua Banerjee, Faculty , Department of Mathematics, IITK

Designed and implemented algorithms to search for proofs of theorems expressed in Rough Temporal Languages

Relevant Courses

Computer Science: Cryptology, Computer Vision , Theory of Computation, Data Structures and Algorithms

Mathematics: Set Theory & Logics, Modal Logic, Discrete Mathematics, Finite Element Method, Linear Programming

Open Source

http://code.google.com/p/roughsetlib/ : (Master's thesis). Simulate Rough Sets and Dynamic Information Systems

https://github.com/4g : Different libraries and implementations.