
EDUCATION

- **University of Waterloo** Waterloo, Canada
Master of Applied Science; Machine Learning and Intelligence *January 2020 – Present*
Systems Design Engineering
- **Indian Institute of Technology (BHU)** Varanasi, India
Dual Degree (Master of Technology and Bachelor of Technology); CGPA: 9.10 / 10.0 *July 2012 – May 2017*
Computer Science and Engineering
- **S K P Vidya Vihar** Banka, India
Matriculation in Senior Secondary Education; Aggregate Percentage: 80.83 / 100.0 *June 2010 – June 2012*
Intermediate of Science
- **St. Joseph's School** Dumka, India
Matriculation in Secondary Education; Aggregate Percentage: 93.86 / 100.0 *May 2010*

RESEARCH INTERESTS

- Computational Neuroscience, Neural Engineering, BCI, Neural Prostheses, Neuroimaging, Machine Learning

NEUROSCIENCE AND NEUROIMAGING RESEARCH EXPERIENCE

- **Resting-State Functional Connectivity analysis of Autistic Individuals**
Self-motivated project, Collaboration with: Prof. Rahul Garg, IIT Delhi *January 2019 – December 2019*
This project involves a study of the alterations in the resting-state functional connectivity of autistic patients. Data-driven approaches (first level and group level GLM) are applied on ABIDE-I and ABIDE-II data-sets to discover functionally altered links along with consolidating, reproducing, and validating existing results. [Code]
- **Neuroscience and Neuroimaging related courses**
Self-Learning *May 2018 – December 2018*
 - Advanced Functional Brain Imaging: A course at IIT-Delhi which teaches basic neuroanatomy, MRI physics, fMRI processing, related statistical concepts, GLM, ISC, and MVPA analysis. [Assignments]
 - Coursera courses: Computational Neuroscience, Principles of fMRI – part 1, Principles of fMRI – part 2

MACHINE LEARNING RESEARCH EXPERIENCE

- **Estimation of train delays at railway stations in India**
Self-motivated project, Collaboration with: Dr. Biplov Srivastava, IBM, USA *July 2017 – April 2018*
 - A delay prediction algorithm inspired from N-Order Markov Processes was formulated which leveraged Random Forest Regressors and Ridge Regressors to predict delays at in-line stations
 - [Open Source at Github], [Research Paper]
- **Algorithms for Subspace Learning**
Master's Thesis, Supervisor: Prof. K K Shukla, IIT-(BHU), Varanasi *August 2015 – May 2017*
The thesis involved developing algorithms for learning latent subspaces from visual features of images for image classification. Two different problem settings were addressed, briefed in following sub-projects.
 - Traditional image classification with training and test images drawn from the same database
 - * A novel algorithm was developed for achieving early fusion of information (modals) via supervised Matrix Factorization which added intelligence to the obtained latent subspace from all modals
 - A novel image classification challenge where training and test images' classes are disjoint

- * Novel approaches to transfer knowledge from training classes to zero-shot test classes via high-level features were developed which achieved state-of-the-art results and outperformed few existing ones

Content-based image classification via multi-modal fusion of visual features

- *Bachelor's Thesis, Supervisor: Prof. K K Shukla, IIT-(BHU), Varanasi* *January 2015 – May 2015*
A Matrix Factorization based framework for multi-modal fusion of n different modals of image data-sets was designed where a latent subspace was learned with the help of simple gradient descent additive update rules.

TECHNICAL EXPERIENCE

- **Nutanix Technologies India Pvt. Ltd.** Bangalore, India
Member of Technical Staff *June 2017 – Present*
 - **Remote Procedural Calls for managing Virtual Machines:** Designed and implemented the code architecture for managing HyperV Virtual Machines via Remote Procedural Calls (RPCs)
 - **Metadata Service:** Designed and implemented a server-client architecture where the Virtual Machines (VMs) could introspect themselves by executing REST calls which landed on their hosts
 - **Proactive CPU Scheduler:** Mentored interns in prototyping a Machine Learning based dynamic CPU scheduler to proactively host the VMs to minimize the number of migrations, CPU hot-spots, and steal time faced by them
- **Centre for e-Governance, Government of Karnataka** Bangalore, India
Software Developer Intern *May 2015 – July 2015*
 - **Online Ticket Management Tool:** Created for monitoring and managing service request tickets for Karnataka State Data Center (KSDC)
 - **Online Asset Inventory Application:** Created for storing and monitoring resource information at KSDC

PUBLICATIONS

- **Estimating Train Delays in a Large Rail Network Using a Zero Shot Markov Model** IEEE
Ramashish Gaurav, Biplav Srivastava *ITSC 2018*
- **Informed Multimodal Latent Subspace Learning via Supervised Matrix Factorization** ACM
Ramashish Gaurav, Mridula Verma, K K Shukla *ICVGIP 2016*
- **Multimodal Subspace Learning on Flickr Images** IEEE
Ramashish Gaurav, Ankit Vallecha, Mridula Verma, K K Shukla *UPCON 2015*

SKILLS

- **Programming Languages:** Python, C++
- **Technologies:** FSL FMRIB Software, Nipy, Nilearn, Nibabel, Nipype, Git

EXTRACURRICULAR ACTIVITIES

- Teaching Assistant for:
 - Computer Programming: 3 semesters
 - Information Security, Network Security, and Network Security Lab: 2 semesters
- Won third position in a dance competition held in freshman year of college
- Team leader and mentor of Academic Automation Group in sophomore year of college
- Taught Algorithms and Data Structures crash course at Programming Pathshala's two weeks workshop

OTHER INTERESTS

- Book Reading, Movies, Music, Badminton, Cricket

MISCELLANEOUS

- Implemented a database security project using Paillier cryptosystem to hide the geospatial locations of users from location-based service providers
- Created a website where members could publish editorials for algorithmic problems hosted on spoj.com