Ramashish Gaurav
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Education

- **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

Neuroscience and Neuroimaging Experience

- **Advanced Functional Brain Imaging**
  http://www.cse.iitd.ernet.in/∼rahulgarg/Teaching/2016/COL786.htm — *May 2018 – Present*
  This advanced course teaches basic neuroanatomy, MRI physics, fMRI processing, related statistical concepts, GLM, ISC and MVPA analysis. Assignments: https://github.com/R-Gaurav/col786

- **Coursera Courses**
  Neuroscience and Neuroimaging related courses — *May 2018 – Present*
  Computational Neuroscience, Principles of fMRI – part 1, Principles of fMRI – part 2

Research Experience

- **Estimation of train delays at railway stations in India**
  Self-motivated project — *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: https://github.com/R-Gaurav/train-delay-estimation
    Link to paper at Arxiv: https://arxiv.org/abs/1806.02825

- **Algorithms for Subspace Learning**
  Master's Thesis (Link) — *August 2015 – May 2017*
  The thesis involved developing algorithms for learning latent subspaces from visual features 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 adds 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 retrieval via multi-modal fusion of visual features**
  Bachelor's Thesis — *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*
  - **RPCs for managing Virtual Machines**: Designed and implemented the architecture for managing HyperV Virtual Machines via Remote Procedure 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 dynamic CPU scheduler for proactively placing the Virtual Machines to minimize the number of migrations, CPU hot-spots and steal time faced by VMs

Skills

- **Programming Languages**: Python, C++ **Technologies**: FSL FMRIB Software, Git

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*

References

- Dr. Biplav Srivastava
  Data Scientist and Master Inventor
  IBM Research, USA
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- Prof. K K Shukla
  Professor and Dean (Faculty Affairs)
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