

Ramit Pahwa

ramitpahwa.github.io, Google Scholar

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EDUCATION

- **Indian Institute of Technology, Kharagpur** Kharagpur, India
Salutatorian, Int. Masters of Science in Mathematics and Computing CGPA: 8.95 Aug. 2014 – April. 2019
- **St.Aloysius Senior Secondary School** Jabalpur, India
Valedictorian, GPA: 95.4 % in 12th April. 2012 – July. 2014
- **St.Aloysius Senior Secondary School** Jabalpur, India
Valedictorian, GPA: 10/10 in 10th April. 2002 – July. 2012

PUBLICATION

- **Lstms with attention for aggression detection.**[Code] [Paper] Santa Fe, New-Mexico, USA
Nishant Nikhil, Ramit Pahwa et al. TRAC, Coling 2018
- **Data-Driven Compression of Convolutional Neural Networks.** [Code] [Paper]
Ramit et al. ACM Manuscript
- **Model Blending for text classification.**[Thesis]
Ramit et al.

PATENT

- **AutoQA: Auto-creation of Custom NLP models using NAS using KD.** USPTO
Ramit Pahwa, Atul Gupta, Varun Bhatia, Gaurav Dubey Under Internal Review

EXPERIENCE

- **Software Engineer, Adobe** Noida
Manager : Varun Bhatia, Dr. Sunav Choudhary, Dr. Vishwa Vinay July 2019 - June 2022
 - **Acrobat Android** : Working on enabling PDF editing functionality to mobile devices, Liquid Mode enabling ML based mobile re-flowing of PDF on device, Read Aloud [text to speech], Neural topic modelling using Deep Learning, Question Answering System for PDF, Enterprise Deployment, Javascript support for PDF rendering engine.
 - **Tech Summit** : My work was selected across Adobe for presenting in Adobe Tech Summit 2021 due to it's organization wide application.
 - **Patent**: 'AutoQA: Auto-creation of Custom NLP models using Neural Architecture Searching using Knowledge distillation ' Under Internal Review
- **Master's Thesis: IIT KGP & Adobe Research** Kharagpur
Guide : Prof. Debjani Chakraborty, Prof. Jayanta Mukhopadhyaya, Dr. Vishwa Vinay August 2018 - August 2019
 - **Distillation**: Transferring the knowledge of Recurrent Neural Network to Convolutional Neural Network using model blending . Reducing the complexity of model by a factor of 15x. To be submitted to *NAACL, 2022*
 - **Paper**: Preprint 'Model Blending for text classification'
- **Adobe Research** Bangalore
Research Intern, Guide : Dr. Sunav Choudhary May 2018 - July 2018
 - **Knowledge Distillation**: Worked on developing a system for compressing state of art CNN without loss of performance using **Reinforcement Learning**.
 - **Compression**: Modeled a Markov Decision Process [MDP], to systematically compress deep CNN.
 - **Publish**: Paper 'Data-Driven Compression of Convolutional Neural Networks'
 - **Key Learning**: Pytorch, Docker, Dash, Reinforcement Learning, Optimization Techniques, Problem identification
- **University of Alberta** Edmonton, Canada
Research Scholar, Guide : Prof. Dana Cobzaz May 2017 - July 2017
 - **Object Detection**: Implemented a Faster R-CNN model for Localization of Femoral Head in Ultrasound Images.
 - **Segmentation**: Implemented a U-net for segmentation on high dimensional ultrasound data.
 - **Pipeline**: Ideated and implemented an end to end training regime involving localization and segmentation.

- **Key Learning:** Keras, AWS, Computer Vision, Image Processing

Risk Latte

Hong Kong

Decemeber 2017 - January 2017

• *AI Intern, Manager: Rahul Bhattacharya*

- **Portfolio Management:** Created a model for portfolio hedging, portfolio optimization, and price forecasting. Also creating a strategy backtesting engine used for simulating and backtesting strategies.
- **Interactive Tool:** Implemented a web application used by hedge fund managers for portfolio management.
- **Key Learning:** Flask, VBA(Excel Programming), Python, Portfolio management strategies.

Myntra

Bangalore

May 2016 - July 2016

• *Research Intern, Manager : Mr. Vishnu Makkapati*

- **Deep Metric Learning:** Implemented Triplet and Siamese network to search for similarity among images for search.
- **Visualization:** Developed a flask app for fetching similar images based on the learned metric.
- **Key Learning:** Caffe, Python, Flask, Git

PROJECTS

- **Karna:** Started Deep Learning group at university
- **Re-colorize:** Automated tool to re-colorize grey-scale image and videos.[Code] [Demo]
- **Advance Numerical Techniques:** Implementation of PDE solvers using Numerical Techniques [Code] [Report]
- **Regression:** Autoregressive Convolutional Neural Networks for Asynchronous Time Series [Code]
- **Optimization Library:** Implementing various Optimization Techniques for Operations Research [Code]
- **Julia:** Implementing the Arnoldi method for solving sparse matrices.
- **Recommendation System:** Music and Movie recommender systems using collaborative filtering on public datasets.

SMALL PROJECTS

- **Transformer:** Implemented transformer architecture from scratch [Code]
- **Knowledge Distillation:** Implementation of Knowledge Distillation for CNN's [Code]
- **Cramer:** Implementation of portfolio hedging, portfolio optimization.Profit Maximisation through Asset Liability Management [Code]

PROGRAMMING SKILLS

- **Machine Learning:** Pytorch, Tensorflow, Keras, Caffe, scikit learn, Microsoft Azure
- **Languages:** Python, Javascript, C++, SQL, Java, Julia, L^AT_EX, HTML, CSS
- **Technologies:** AWS, React, Dash, Flask, OpenCV, Github, Bitbucket
- **Platforms:** Windows, MacOS, Linux
- **Others:** Bash, Git, Andriod

ACHIEVEMENTS

- **INSIPRE:** Recipient of the prestigious Innovation in science pursuit of Inspired Research Scholarship.
- **UARE:** Recipient of the University of Alberta Research Experience.
- **KVPY:** Recipient of the prestigious Kishore vaigyanik protsahan yojana Scholarship
- **JEE Advanced:** Ranked amongst top 1.5% of the 150,000 students
- **JEE Mains:** Placed in 0.05% of 1,400,000 engineering aspirants
- **Junior Science Olympiad:** Ranked 5th amongst 500,000 apirants

COURSEWORK

- **Machine Learning:** Deep Learning [fast.ai], Machine Learning [Stanford],Image Processing, Statistical Learning [Stanford]
- **Computer Science:** Graph Theory, Cryptography, Object Oriented Design,Data Base Management Systems, Computer Architecture, Systems Programming
- **Mathematics:** Probability and Statistics, Probabilistic Optimization Techniques, Multi Objective Optimization Linear Algebra, Discrete Mathematics, Advance Numerical Techniques, Operations Research, Real and Functional Analysis, Measure theory, Finite automata

EXTRA CURRICULAR

- **Kharagpur Artificial and Neural Algorithms**

Co-founder

September 2017 - Present

- **KARNA:** I was responsible for founding where I promoted to research in AI, which resulted in numerous workshop publications

- **Entrepreneurship Cell**

Senior Manager

September 2014 - April 2015

- **Global Entrepreneurship Summit:** I was responsible for leading a 3-tier team to organize the Global Entrepreneurship Summit for more than 1500 participants.
- **Finance Head:** Responsible for managing Cell fund in excess of 50 lakhs.
- **Empressario:** Organized India biggest Business Model Competition.
- **Entrepreneurship Awareness Drive:** Organized Awareness drives in 23 cities in India.
- **Website:** Developed the website from scratch using PHP, Bootstrap, HTML and CSS.

- **Alumni Cell**

Associate Manager

September 2014 - April 2017

- **Alumni Meet:** Organize events for more than 300 alumni around the year.
- **Sponsorship:** Raised sponsorship for the events in excess of 10 Lakh.