

PERSONAL INFORMATION Harsh Shrivastava

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PERSONAL STATEMENT A Research Intern at MIDAS Lab, Indraprastha Institute of Information Technology (IIIT) Delhi with immense interest and passion for Deep Learning research and excellent command on AI-based product development in Tensorflow and Keras, looking for a role in world-class research Labs where I can work with incredible AI Researchers to propel forward the Artificial Intelligence Research & Development.

WORK EXPERIENCE

20/12/18–Present

Research Intern

Indraprastha Institute of Information Technology (IIIT), Delhi, Delhi (India)

- Working with Dr Rajiv Ratn Shah, Asst. Prof. IIITD at **Multimodal Digital Media Analysis Lab (MIDAS Lab)** on a research project titled "**Detection and Recommendation of Events based on Analysis of Cataract Surgery Videos**"
- We are developing a Novel AI software that would be a precious aid to doctors and surgeons during Cataract Surgery[more details can't be disclosed].
- Tools & Technologies being used: Deep Learning, Computer Vision, Tensorflow, Keras, ScikitLearn, ScikitImage, OpenCV, Matplotlib, Pandas, Numpy and Python.

1/12/18–Present

AI Computer Vision Research Intern

Companion AST, IIT Madras, Work From Home (India)

- Trying to win the evolutionary war between microbial genes and humans by the rapid phenotypic **Diagnosis of Antibiotic-Resistant Bacteria using an AI-based approach.**
- I'm developing a deep learning and computer vision based technology to detect antibiotic-resistant bacterias in the antibiotic solution videos prepared by Biologists in the lab.
- Tools & Technologies being used: Deep Learning, Machine Learning, Computer Vision, Video processing, Tensorflow, Keras, OpenCV, Pandas, Numpy, Python.

8/8/18-9/9/18

Machine Learning Research (Computer Vision) Intern

DataBytes Analytics, Kolkata (India)

- Implemented Cascade Architecture as proposed in "**Scene Parsing through ADE20K Dataset**" paper on Kitti2015 dataset for image segmentation for street scenes and achieved a recall of 93.4% and mean recall of 76.7%.
- Implemented **Siamese Network** and tuned it for Facial Recognition.

3/5/18–4/7/18

Data Science/Analysis Intern

Peacock Solar, Delhi (India)

- Wrote a python script to **web scrap** entire Indian census 2011 data from mp.gov.in, analyzed and built dashboards.
- **Clustered the data for targeted marketing** of Peacock's solar products.

2/2/18–12/4/18

Machine Learning Intern

Celebal Tech, Jaipur (India)

- Built a **CNN + LSTM** model for detection of **eye disease Torsion**.
- Built an **Ensemble of Support Vector Machines** for classifying the customers who will return the product when delivered to their home (return to origin).

EDUCATION AND TRAINING

15/08/2016–Present

Bachelors of Engineering (Computer Science & Engineering)

Rustamji Institute of Technology, BSF Academy, Gwalior (India)

Relevant Subjects:

- Discrete Structures
- Object Oriented Programming with C++
- Data Structures 1
- Data Structures 2
- Analysis & Design of Algorithms
- Calculus [M1]
- Linear Algebra [M2]
- Probability & Statistics [M3]
- Operating System
- Database Management systems
- Computer Graphics

6/5/18–12/10/18

Deep Learning Specialization

deeplearning.ai, Online

Courses:

1. Deep Learning & Neural Networks
2. Neural Networks Optimization Algorithms
3. Structuring Machine Learning Projects
4. Convolutional Neural Networks
5. Sequence Models

3/3/18–4/4/18

Data Science, Machine Learning & Deep Learning with Python

Udemy, Online

Topics Covered:

- Linear Regression
- Logistic Regression
- Support Vector Machines
- Neural Networks
- Decision Trees
- Ensembling Techniques
- A/B testing

SKILLS & EXPERTISE

- Mathematical Expertise: Linear Algebra, Probability & Statistics, Calculus, Deep learning Theory.
- Tools Expertise: Tensorflow, Keras, ScikitLearn, Pandas, Numpy, Matplotlib, Seaborn, Scipy, OpenCV.
- Programming Languages: C++ and Python, Matlab

ADDITIONAL INFORMATION

Responsibilities

- Dean, School of AI, Gwalior Chapter
 - *Conducted a Workshop on “Deep Learning Approach to Artificial Intelligence” at Rustamji Institute of technology.
 - * Leading a team of AI enthusiasts mentoring over 300 students from three major colleges of Gwalior area ie. ITM Institutions, MITS Gwalior, and RJIT BSF Academy.
- Chief Coordinator, Student Branch of Computer Society of India at RJIT, Gwalior
 - * Conducted a Seminar on “Artificial Intelligence and Healthcare” at RJIT Gwalior.
 - * Head Instructor of “Micro-Bachelors program in Machine Learning” started by CSI RJIT.

Personal Projects

- miniRotNet
A tool for automated correction of orientation of images.
Built a pretrained VGG16+LogisticRegression Model and grid-searched the best params to achieve a test set F1 score of 93%.
<https://github.com/HarshVardhanSh/miniRotnet>
- Parabola_GAN
My Implementation of simple Generative Adversarial Network in Tensorflow and Keras.
https://github.com/HarshVardhanSh/parabola_gan
- YoloV2 for Vehicle Detection
Implemented ideas from “you look only once” paper for Car detection on roads.
<https://github.com/HarshVardhanSh/Yolov2-Implementaion>

Honours and awards

- Facebook Pytorch Challenge Scholarship Awardee (Oct. 2018)
- Google India Challenge Scholarship Awardee (Feb. 2018)
- Github Hacktoberfest Challenge Finisher (Oct 2018)
- Qualified for Capgemini Tech Challenge (Data Science) (Oct. 2018)
- Qualified for SnackDown 2018
- MP Excellent Student Scholarship Awardee (2016)
- MP Mission Excellence Vigyan Manthan Yatra Scholarship Awardee (2014)

Publications

“**The Role of Artificial Intelligence in Cyber Security**” chapter included in an International book “Countering Cyber Attacks and Preserving the Integrity and Availability of Critical Systems”, published by IGI Global.

Memberships

Data Science Foundation
International Computer Science and Engineering Society (ICSES)
the IRED
Computer Society of India
Royal Statistical Society

References

Dr Arvind Kumar Jain,
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Dr Rakesh Sohal
Head of the Department of Physics, Rustamji Institute of Technology, Gwalior.
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