ANIL K. BATRA

Research Engineer

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RESEARCH EXPERIENCE

Research Engineer
Pro @ Facebook

📅 Jan 2019 – Present   📍 Gurugram, IN

- Exploring different neural architectures and semi/weak supervised methods to extract buildings from satellite images.
- Implemented distributed learning workflows for large scale training to extract road topology from noisy labeled data and deployed to OSM Maps.

Research Assistant
IIIT Hyderabad (CVIT)

📅 Jan 2016 – Dec 2018   📍 Hyderabad, IN

Team : Prof. C.V. Jawahar (CVIT), Suriya Singh (MILA), Guan Pang (Facebook), Saikat Basu (Facebook), Manohar Paluri (Facebook)

- Working under the guidance of Prof. C.V. Jawahar and team on the development of knowledge sharing algorithms for the analysis of satellite images with less labeled data.

Mentor
Talent Sprint/IIIT Hyderbad

📅 Jan 2018 – Apr 2018   📍 Hyderabad, IN

- Mentored industrial professional in lab sessions by explaining the concepts of AI & ML in 12 weeks course.

PROJECTS

Improved Road Connectivity in an End-to-End Network
CVPR 2019

- Design a novel task to impose connectivity constraints to extract the topological correct road network from satellite images.
- Proposed a multi-task learning architecture to effectively boost the road connectivity.
- Proposed a connectivity refinement model to recursively connect the broken road segmentation.

Self Supervised Feature Learning for Semantic Segmentation of Overhead Images
BMVC 2018

- Improve semantic segmentation of different tasks (Land Classification, road network estimation and scene parsing) by learning a proxy task of image in-painting.
- Develop an adversarial training scheme to dynamically increase the difficulty of proxy task, leading to better segmentation

Motion Field Estimation in image sequence
DIP Course Project

- Study and analysis of edge flow in images to estimate the flow of different objects. In the course project, I use discrete Markov Random Field (MRF) to extract the motion of each object from synthetic and natural image sequence.

Topic Models for Image Annotation & Text Illustration
SMAI Course Project

- Study and use Latent Drichlet Allocation model to describe and annotate images from vast resources of freely available web documents with images.

EDUCATION

M.S. in Computer Science
IIIT Hyderabad

📅 Jan 2016 – Jul 2019

CGPA : 8.44/10

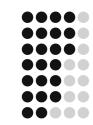### B.Tech in Electronics & Communication
Punjab Technical University

📅 Jul 2003 – May 2007

CGPA : 8.38/10

SKILLS

Python
C#
PyTorch
Caffe
OpenCV
C/C++
CUDA

OTHER SKILLS

LaTeX   JavaScript   MATLAB   HTML   Sitecore   SharePoint   SQL   GO   Tensorflow   TensorBoardX

COURSE WORK

Computer Vision

Digital Image Processing

Artificial Neural Networks

Optimization Methods

Statistcal Methods in AI

Topics in Machine Learning (RL basics)

Computer Graphics

ACHIEVEMENTS

🏆 **Gold Medalist**
in Bachelor of Technology, 2007.

🛡 **Qualified GATE 2009**
in ECE with 99.4%tile with All India Rank 254.

🛡 **Qualified GATE 2010**
in ECE with 99.2%tile with All India Rank 747.

PUBLICATIONS

👥 Conference Proceedings

- A. Batra, S. Singh, G. Pang, S. Basu, C.V. Jawahar, and M. Paluri. "Improved Road Connectivity by Joint Learning of Orientation and Segmentation". In: CVPR 2019,
- S. Singh, A. Batra, G. Pang, L. Torresani, S. Basu, M. Paluri, and C.V. Jawahar. "Self-supervised Feature Learning for Semantic Segmentation of Overhead Imagery". In: BMVC, 2018.

INDUSTRIAL EXPERIENCE

Sr. Consultant
Deloitte

📅 Feb 2015 – Sep 2017   📍 Hyderabad, IN

- Business requirement gathering, estimation and solution designing.
- Supervise team members and oversee their professional developments.
- Product Support, incident, change and risk management.

Sr. Associate Platform L1
Sapient

📅 March 2010 – Jan 2015   📍 Gurgaon, IN

- Technical impact analysis and solution designing.
- Design and customize web based Content Management applications.

Sr. Associate Technology
Sapient (Client - Department Of Health)

📅 Jan 2013 – Apr 2014   📍 London, UK

- Coordinate with client teams for deployment, knowledge transfer and future enhancements.
- Design, customize and maintain applications in Microsoft Technology stack.

Associate Consultant
HCL

📅 Sep 2009 – March 2010   📍 Noida, IN

- Development of windows and web application with SQL server as back-end database .

Software Engineer
Mahindra Satyam

📅 Oct 2007 – Sep 2009   📍 Gurgaon, IN

- Trained on Microsoft .Net, Data Structures, C++
- Design sequence diagrams, low level design documents and develop front end HTML web pages with JavaScript.

CERTIFICATES

ML Course By Andrew Ng, Coursera

Scrum Master

PERSONAL DETAILS

D.O.B.	:	Dec. 21, 1985
Marital Status	:	Married
Languages	:	English, Hindi, Punjabi
Nationality	:	Indian

REFERENCES

Prof. C. V. Jawahar
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✉ Facebook, US