

ANIL K. BATRA

PhD Student

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RESEARCH EXPERIENCE

CDT-NLP PhD Student

School of Informatics, University of Edinburgh

Sept 2020 – Aug 2024 (Expected) Edinburgh, UK

Supervisors : Dr. Laura Sevilla & Prof. Frank Keller

- Localizing and Summarizing events of sequential processes in videos.

Research Engineer

Pro @ Facebook

Jan 2019 – May 2020

Gurugram, IN

- Explored different neural architectures and semi/weak supervised methods to extract buildings from satellite images.
- Implemented large scale representation learning flow for 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 Hyderabad

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

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
TensorFlow
FastAI
Caffe
OpenCV
C/C++
CUDA






OTHER SKILLS

LaTeX JavaScript MATLAB HTML
Sitecore SharePoint SQL GO
Tensorflow TensorBoardX

COURSE WORK

Computer Vision NLP Pragmatics
Computer Graphics Linguistics Syntax
Digital Image Processing
Artificial Neural Networks
Optimization Methods
Statistical Methods in AI
Topics in ML (RL basics)

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.

Multimodal Procedural Learning using WikiHow articles

CDT - NLP Project

- Study to investigate the role of visual information to learn the procedures using pairwise comparison of steps of WikiHow articles.

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 Dirichlet Allocation model to describe and annotate images from vast resources of freely available web documents with images.

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. Data Scientist, ESRI

 May 2020 – Sep 2020

 New Delhi, IN

- Improve Road prediction models and implemented my CVPR work in ESRI framework of arcgis-python.

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 and future enhancements.
- Design, customize and maintain applications in Microsoft Technology stack.

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

Available on Request