# **ANIL K. BATRA**

#### PhD Student

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#### RESEARCH EXPERIENCE

#### CDT-NLP PhD Student

#### School of Informatics, University of Edinburgh

Supervisors: Dr. Laura Sevilla & Prof. Frank Keller

• Localizing and Summarizing events of sequential processes in videos.

# Research Engineer

#### Pro @ Facebook

**♀** 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)

m 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

m 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**

m Jan 2016 - Jul 2019

CGPA: 8.44/10

# B.Tech in Electronics & Communication

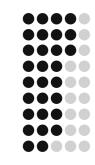
### **Punjab Technical University**

# Jul 2003 - May 2007

CGPA: 8.38/10

#### **SKILLS**

**Python** C# **PvTorch TensorFlow FastAl** Caffe **OpenCV** C/C++ **CUDA** 



#### OTHER SKILLS

JavaScript | MATLAB LaTeX HTML SharePoint SQL Sitecore GO Tensorflow **TensorBoardX** 

# **COURSE WORK**

NLP **Pragmatics Computer Vision Computer Graphics Linguistics Syntax** Digital Image Processing **Artificial Neural Networks Optimization Methods** Statistical Methods in Al 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 Drichlet 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)

m 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

**M** Oct 2007 - Sep 2009

**Q** 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