ANIL K. BATRA

PhD Candidate, CDT in NLP

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RESEARCH EXPERIENCE

PhD at the UKRI Centre for Doctoral Training in NLP
School of Informatics, University of Edinburgh

📅 Sept 2020 – Jan 2025 (Expected) 📍 Edinburgh, UK

Supervisors : Dr. Laura Sevilla, Prof. Marcus Rohrbach, Prof. Frank Keller

- Fine-grained Procedural Video Understanding (Ego/Exo)
- Efficient Multi-modal AI (VideoQA, Grounding, Video-to-Text)

Research Intern, Mediatek Research

📅 June 2022 – Sep 2022 📍 Remote, UK

- Understand and Implement Diffusion models for unconditional image generation to reduce the inference time. The work 'Image generation with shortest path diffusion' is accepted at ICML 2023.

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. Technical Blog by Meta

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.

PUBLICATIONS

👥 Conference Proceedings

- **Anil Batra**, Davide Moltisanti, Laura Sevilla-Lara, Marcus Rohrbach, and Frank Keller (2024). "Efficient Pre-training for Localized Instruction Generation of Videos". In: *arxiv*.

- **Anil Batra**, Shreyank N Gowda, Frank Keller, and Laura Sevilla-Lara (2022). "A Closer Look at Temporal Ordering in the Segmentation of Instructional Videos". In: *BMVC*.

- **Anil Batra***, Surya Singh*, Guan Pang, Saikat Basu, C.V. Jawahar, and Manohar Paluri (2019). "Improved Road Connectivity in an End-to-End Network". In: CVPR (*=Equal Contribution).

- Suriya Singh*, **Anil Batra***, Guan Pang, Lorenzo Torresani, Saikat Basu, Manohar Paluri, and C.V. Jawahar (2018). "Self Supervised Feature Learning for Semantic Segmentation of Overhead Images". In: BMVC (*=Equal Contribution).

EDUCATION

M.S. in Computer Science
IIIT Hyderabad

📅 Jan 2016 – Jul 2019

CGPA : 8.44/10
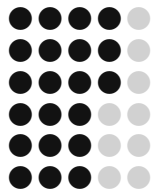
B.Tech in Electronics & Communication
Punjab Technical University

📅 Jul 2003 – May 2007

CGPA : 8.38/10

SKILLS

Python ●●●●○
PyTorch ●●●●○
C# ●●●●○
TensorFlow ●●●○○
OpenCV ●●●○○
C/C++ ●●●○○

OTHER SKILLS

LaTeX JavaScript MATLAB
HTML GDAL SQL JAX
TensorBoardX

COURSE WORK

Computer Vision NLP/NLU
Probabilistic Modelling and Reasoning
Computer Graphics
Linguistics Syntax Pragmatics
Digital Image Processing
Neural Networks and Optimization Methods
Statistical Methods in AI RL basics

ACHIEVEMENTS

🛡 **4 Year - PhD Funding (2020-2024)**
UKRI CDT in NLP, University of Edinburgh, Scotland

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

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

TEACHING ASSISTANT

- **Marker** - Image and Vision Computing, Spring 2022
- **Marker** - Applied Machine Learning, 2022/2023
- **Marker & Tutor** - Natural Language Generation & Understanding, 2023
- **Demonstrator & Tutor** - Data Mining and Exploration, Spring 2021

PROJECTS

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.

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.

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.

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.

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