

Pratulya Bubna

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EDUCATION

University of Southern California (USC)

Los Angeles, CA

M.S. in Computer Science (3.82/4.00)

Aug. 2019 — Dec. 2021

Coursework: Artificial Intelligence, NLP, Algorithms, Operating Systems

Guru Gobind Singh Indraprastha University

Delhi, India

B.Tech. in Information Technology (First Class with Distinction)

2014 — 2018

WORK EXPERIENCE (link in title)

Mercedes-Benz Research & Development

Bengaluru, India

Research Intern | Intelligent Interiors (Cars)

Jun. 2020 — Dec. 2020

- Researched in deep learning for 3D point clouds and synthetic data generation
- Experimented with 3D tasks — mesh reconstruction, surface normal estimation, part segmentation, 3D object classification

USC Information Sciences Institute

Los Angeles, CA

Graduate Research Assistant | AI Division | Center on Knowledge Graphs

Oct. 2019 — May 2020

- Worked with Machine Learning (ML) and GIS tools to develop an unsupervised framework that extracts geographical features (eg. railroads, wetlands) from scanned historical maps and links them over time and space using knowledge graphs.
- Trained UNet, PSPNet, DeepLabV3 (with different backbone networks) to segment the railroad features.
- Denoised the vector data (eg. railroads) from the segmentation masks using cluster analysis as a post-processing step.

Coding Blocks

New Delhi, India

Course Instructor, Mentor

Jun. 2018 — Jul. 2019

- Taught hands-on coding lectures on Machine Learning, Deep Learning and Server-Side Programming with Python to **100+** undergrads and working professionals.
- Notable Projects: Image Captioning, GANs, OpenAI Gym, Text Generation with LSTMs, Neural Style Transfer. [\[Github\]](#)

Defense Research & Development Organization

Delhi, India

Data Science Research Trainee

Mar. 2018 — May 2018

- **Implemented a 2017 research paper** on using deep Convolutional Recurrent Neural Networks (CRNN) for the task of Language Identification (LID) in Speech Recognition (ASR) systems for native Indian languages. [\[PDF\]](#)

RESEARCH

Linking Online News Semantically using NLP and Semantic Web Technologies

IJCSSE, 2018

P. Bubna, S. Sharma, S.K. Malik

[\[PDF\]](#), [\[Github\]](#)

- Proposed an architecture to harness the utility of semantic web technologies in linking and structuring textual data semantically, with the use of NLP, ontologies and graph databases (AllegroGraph).

RELEVANT PROJECTS (link in title)

Placement Cell Web Portal

Aug. 2016 — Aug. 2018

Self-Initiated Project | Team Head | Full-Stack Developer | Server Admin

[\[Github\]](#)

- Built a centralized portal to digitize and streamline the placement activities of over **120+ colleges** affiliated to GGSIPU.
- Ported the laborious offline clerical work to the semi-automated online system.
- The portal facilitated interaction among **630+ students** and **30+ recruiters**, for the 2018 career session of my college.

SKILLS

Programming Languages Python, C++

Frameworks and Tools PyTorch, Keras, numpy, pandas, open-cv, sklearn

Web Development Django, Flask, Tornado, HTML/CSS, Javascript, SQL, Nginx, Unicorn, Celery, Redis, Docker

GIS PostGIS, GeoPandas, Shapely

Knowledge Representation RDF, OWL, SPARQL, Triplestore

Music Grade 8 Lvl. Guitarist (Trinity Rock & Pop, London)