

Pratulya Bubna

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EDUCATION

University of Southern California (USC)

Los Angeles, CA

M.S. in Computer Science (3.86/4.00)

Aug. 2019 — Dec. 2021

Coursework: Algorithms, Operating Systems, Artificial Intelligence, NLP

Guru Gobind Singh Indraprastha University

Delhi, India

B.Tech. in Information Technology (81.51%, First Class with Distinction)

2014 — 2018

SKILLS

Languages Python, C, C++, Javascript, Bash, HTML, CSS

Libraries PyTorch, Keras, NumPy, Scikit-learn, OpenCV, Django, Flask, Tornado, ipyvolume, pthread, pyspark

Others Docker, UNIX/Linux, Jupyter, Knowledge Graphs, Hadoop, Spark

EXPERIENCE (link in title)

Mercedes-Benz Research & Development

Bengaluru, India

ML Engineer Intern | Intelligent Interiors (Cars)

Jun. 2020 — Dec. 2020

- Researched in deep learning for 3D point clouds and synthetic data generation, experimenting with and implementing papers on 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. [\[Github\]](#)

SELECT PROJECTS (link in title)

Weenix Operating System

Feb. 2021 — Present

Operating Systems | CSCI 402

[\[Website\]](#)

- Developed an OS in C (based on V6 Unix) that supports processes, threads, virtual file system, S5FS and virtual memory

Token Bucket Filter

Jan. 2021 — Feb. 2021

- Developed a multi-threaded token bucket filter simulation using pthread library in C

[\[Website\]](#)

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.

RESEARCH

Linking Online News Semantically using NLP and Semantic Web Technologies

IJCSE, 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).