

JAY GALA

✉ jaygala24@gmail.com 🌐 jaygala24.github.io 📄 github.com/jaygala24

EDUCATION

**Dwarkadas J. Sanghvi College of Engineering
(Mumbai University)**

B.E. in Computer Engineering

Applied Mathematics, Discrete Mathematics, Algorithms, Databases, Machine Learning, Artificial Intelligence, Natural Language Processing

August 2017 - July 2021

Overall GPA: 9.86/10

EXPERIENCE

University of California San Diego

Research Intern

June 2021 - Present

Advisor: [Dr. Pengtao Xie](#)

- Working on applying humans' learning skills, specifically *learning from mistakes*, as an extension to [Skilllearn](#).
- Built efficient optimization algorithms for Neural Architecture Search adopting an importance weighting strategy.

Tata Consultancy Services

Machine Learning Project Intern

Dec 2019 - Feb 2020

- Developed machine learning models for customer behavior analysis to prevent customer churn.
- Prepared a custom dataset by developing surveys to handle open-ended and closed-ended questions.
- Extracted feedback responses from handwritten survey forms using Optical Character Recognition.

Ucadd EdTech

Web Developer

Dec 2018 - Aug 2019

- Built a platform using MERN stack for the organization's instructors to build courses.
- Introduced data analytics to generate helpful insights regarding the courses for the instructors.

Sensum Fintech

Web Developer

Jan 2019 - Feb 2019

- Constructed visualization graphs using plotly to show the trends in the finance trading markets.
- Integrated APIs for stock recommendations and improved user experience by optimizing the builds.

Unicode

Web Developer & Student Mentor

Aug 2018 - June 2021

- Developed official website using React and Django for the organization to showcase the undertaken projects.
- Mentored a team of sophomores on projects such as Inventory Management, Masters and Placement Portals.
- Conducted workshop on web development and open-source development for over 100 students in the college.

PROJECTS

A Federated Approach to Hate Speech Detection (Ongoing)

Advisor: [Dr. Zeerak Talat](#)

- Identify real-world representations of overt hate speech on different non-iid datasets using Federated Learning.
- Extension to the cross-dataset model generalization by [Fortuna et al.](#) for hate speech.
- Experiments include base models, AWD-LSTM, DistilBERT, ALBERT, DistilGPT-2, FNet, etc.

Ocubot - Image-based Dialog

Advisor: [Dr. Pratik Kanani](#)

- Final-year research project on building a conversational dialog system about visual information in an image.
- Incorporate coreference resolution using attention over dialog history to have more natural conversations.
- Reduced modality biases by improving visual context with dense captions and attention over these captions.

Anomaly Detection in ECG Signals

Advisor: Dr. Pratik Kanani

- Industry collaboration to develop neural models for detecting anomalies in processed ECG signals from IoT devices.
- Applied distributed computing algorithms for speed improvements during inference and load balancing.

Annotated PyTorch Paper Implementations

[View](#)

- Annotated PyTorch implementations of deep learning papers as interactive jupyter notebooks.
- Includes papers such as Word2Vec, GloVe, KimCNN, Bahdanau Attention, Transformer, etc.

C Programming Exam Portal

[View Demo](#)

- A paperless solution for conducting C programming exam for over 500 students at [D. J. Sanghvi](#).
- Generated data-driven detailed reports for students and instructors to enhance the overall learning experience.

RESEARCH & PUBLICATIONS

Publications available at [Google Scholar](#)

- [1] **Jay Gala**, Hrishikesh Shenai, Pranjal Chitale, Kaustubh Kekre, and Pratik Kanani, "Improving Image-based Dialog by Reducing Modality Biases," in *2021 5th International Conference on Advances in Computing and Data Sciences*, Accepted.
- [2] Hrishikesh Shenai*, **Jay Gala***, Kaustubh Kekre*, Pranjal Chitale*, and Ruhina Karani*, "Combatting COVID-19 Using Object Detection techniques," in *Cyber-Physical Systems for COVID-19*, ch. 4, Elsevier, *Accepted*.
- [3] Pranjal Chitale*, Kaustubh Kekre*, Hrishikesh Shenai*, and Ruhina Karani* and **Jay Gala***, "Pothole Detection and Dimension Estimation System using Deep Learning (YOLO) and Image Processing," in *2020 35th International Conference on Image and Vision Computing New Zealand (IVCNZ)*, pp. 1–6, 2020.
- [4] Dev Savla, Amogh Parab, Kaustubh Y. Kekre, **Jay Gala**, and Meera Narvekar, "IoT and ML based Smart System for Efficient Garbage Monitoring: Real Time AQI monitoring and Fire Detection for dump yards and Garbage Management System," in *2020 Third International Conference on Smart Systems and Inventive Technology (ICSSIT)*, pp. 315–321, 2020.
- [5] Dev Savla, Amogh Parab, Kaustubh Kekre, **Jay Gala**, S. Ramchandra, and Pankaj Sonawane, "Virtual Farmer: Real Time Crop Prediction and Automatic Irrigation System," in *2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, pp. 1–5, 2020.

SKILLS

Languages	Python, C, Java, JavaScript, SQL, HTML5
Databases	MySQL, SQLite, PostgreSQL, MongoDB
Libraries and frameworks	PyTorch, Keras, Scikit-learn, NumPy, Pandas, OpenCV, Gensim, SpaCy, NLTK, Flask, FastAPI, Streamlit, ReactJs, NodeJs
Others	Git, Jupyter, Docker, Raspberry Pi, LaTeX

CO-CURRICULAR ACTIVITIES

Teaching Assistant for an undergrad-level Machine Learning Course - [UMLSC](#), supported by **Google Research India**
Member of [Shalizi–Stats](#) reading group led by [Swapneel Mehta](#) which focuses on the stats book [Advanced Data Analysis from an Elementary Point of View](#) by Cosma Shalizi and [Bayesian Statistics](#).

Presented ML paper reviews as a part of [Unicode Research Group](#) and currently working on identifying the causal effects of non-expert mentors on the careers of the mentee (students) in educational institutions

HONORS AND AWARDS

Winner at ACM LOC Hackathon (2020)

Top 3 at CodeShashtra (State-wide hackathon) (2020)