

# JAY GALA

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## EDUCATION

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

B.E. in Computer Engineering

2017 - 2021 (expected)

Overall GPA: 9.82/10

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

## EXPERIENCE

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**University of California San Diego**  
*Research Intern*

June 2021 - Present

Guide: Dr. Pengtao Xie

- Working on applying humans' learning skills for Neural Architecture Search

**Tata Consultancy Services**  
*Machine Learning Project Intern*

Dec 2019 - Feb 2020

- Developed NLP language models for customer analysis to prevent customer churn
- Prepared custom dataset, created surveys to handle open-ended and closed-ended questions
- Extracted feedback responses from handwritten forms using OCR
- Technologies: Python, Keras, NLTK, Gensim, OpenCV, NumPy, Pandas

**Ucadd EdTech**  
*Web Developer*

Dec 2018 - Aug 2019

- Built a platform for the organization's instructors to build courses
- Introduced data analytics to generate useful insights regarding the courses for the instructors
- Technologies: ReactJs, NodeJs, ExpressJs, MongoDB

**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
- Technologies: ReactJs, Material UI, Plotly

**Unicode**  
*Web Developer & Student Mentor*

Aug 2018 - June 2021

- Mentored a team of sophomores on projects such as Inventory Management, Masters and Placement Portals
- Conducted workshop on web and open-source development for over 100 students in the college
- Technologies: ReactJs, NodeJs, MongoDB, Django, MySQL

## PROJECTS

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**Ocubot - Image-based Dialog for Visually Impaired**

Guide: Dr. Pratik Kanani

- Incorporate knowledge from perception and language to have more natural conversations
- Reduced modality biases by improving visual context with the use of dense captions and attention
- Technologies: Python, PyTorch, NLTK, SpaCy, Jupyter

## Image Captioning using Attention

[View Notebook](#)

- Generated descriptive captions from an image along with attention map
- Implementation of Show, Attend and Tell paper by [Kelvin Xu et al.](#) in PyTorch
- Technologies: Python, PyTorch, NLTK, Jupyter

## PyTorch Paper Implementations

[View](#)

- Implementations of deep learning papers using PyTorch
- Technologies: Python, PyTorch, NLTK, SpaCy, NumPy, Pandas, Jupyter

## C Programming Exam Portal

[View Demo](#)

- A paperless solution for conducting C programming exam for over 500 students at D. J. Sanghvi
- Reduced teacher workload by automating report generation
- Technologies: ReactJs, Material UI, NodeJs, ExpressJs, MongoDB

## RESEARCH & PUBLICATIONS

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*Publications available at [Google Scholar](#)*

### Improving Image-based Dialog by Reducing Modality Biases

Apr 2021

- 5th International Conference on Advances in Computing and Data Sciences, Springer, Presented

### Pothole Detection and Dimension Estimation

Nov 2020

- 35th International Conference on Image and Vision Computing New Zealand, IEEE

### IoT and ML based Smart System for Efficient Garbage Monitoring

Aug 2020

- 3rd International Conference on Smart Systems and Inventive Technology, IEEE

### Virtual Farmer

Jul 2020

- 11th International Conference On Computing, Communication And Networking Technologies, IEEE

## SKILLS

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|--------------------------|--|
| 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

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**Teaching Assistant** for an undergrad level Machine Learning Course - [UMLSC](#), Summer 2021

Part of **Shalizi-Stats reading group** led by [Swapneel Mehta](#) which focuses on the book [Advanced Data Analysis from an Elementary Point of View](#) and Bayesian Statistics taught by [Fenil Doshi](#)

Presented [paper reviews](#) as a part of the **Unicode Research Group** on the topics of Variational Inference & Probabilistic Programming

## HONORS AND AWARDS

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**Winner** at ACM LOC Hackathon (2020)

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

## HOBBIES

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Writing Blogs, UI/UX Design, Student Leadership