

Kalpesh Dusane

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EDUCATION

| Degree | University | Year | CGPA |
|--------|---|-------------------|---------|
| M.Tech | IIT Bombay Computer Science & Engineering | July'17 - June'19 | 8.37/10 |
| B.E. | Pune University Computer Science & Engineering | July'11 - June'15 | 8.11/10 |

WORK EXPERIENCE

• Oracle | 📍 Bangalore

Senior Member of Technical Staff | *Advanced Queuing*

April'22 - Present

- Developed an automated online migration tool to help Oracle's existing **10k+** Advanced Queue customers migrate to the new Transactional Event Queue without losing the message state and queue metadata
- Implemented and integrated all primary APIs, including commit and fallback mechanisms, checking queue status, and message statistics
- Developed a new API for renaming transaction event queue objects, allowing users to take backup and create a new queue with an existing name without changing the application
- Resolved several complex feature integration issues, such as latch and lock handling, concurrency issues, rule handling, queue cache state consistency, and crash recovery scenarios

Member of Technical Staff | *Advanced Queuing*

July'19 - April'22

- Developed an API that performs compatibility checks for Advanced Queue users to record the features that are not supported in Transactional Event Queue
- Contributed to AQ-JMS client-side layer to handle various enqueue, dequeue, and large payload scenarios
- Integrated in-house application continuity framework into advanced queue APIs and implemented an enhancement to support replay for interconnected enqueue-dequeue operations
- Resolved issues in several areas, including export-import, rules engine, handling large payloads for the JMS text type, and queue-level security privileges

Tools & Technologies: C, Java, PL/SQL

• Cognizant | 📍 Chennai

Programmer Analyst Trainee

Sep'15 - Sep'16

Content Management System | *Banking & Finance*

- Worked as a full-stack software engineer on the agile development of a web application that provides a content management solution that allows users to create and customize cards or other financial documents
- Incorporated the Kendo UI framework to improve front-end functionality

E-Learning Platform | *Cognizant Internal*

- Selected for a team of 30 new hires across India to work on an internal project for employees going through the training process
- Developed a complete module to capture and display the results of tests taken by a trainee

Tools & Technologies: C#, SQL Server 2014, JavaScript

• Persistent Systems Ltd. | 📍 Pune





Project Intern | *Image Retargeting using CUDA enabled GPU* 🔄 ↗

June'14 - April'15

- Developed a Windows application that reduces the size of an image using the content-aware image resizing algorithm - **Seam Carving**
- Achieved **~7.5X** speedup in GPU execution time compared to CPU

Tools & Technologies: CUDA C++, Multi-Threading

MAJOR PROJECTS

- **Depth Estimation of Underwater Images** May'18 - June'19
M.Tech Project (Advisor: Prof. Ajit Rajwade)
 - Estimated depth map of ground surface submerged underwater from video sequences of a single static camera located above the water
 - Implemented KLT and **Siamese Convolutional Neural Network(CNN)** to track salient feature points
 - Implemented K-means clustering algorithm to estimate piecewise flat surface
 - Implemented **MultiRANSAC** algorithm for estimating piecewise planar surface
 - Constructed a loss function using the L1 norm for a generic arbitrary surface with a relative error of **7.89%**
 - **Tools & Technologies:** Python(NumPy, SciPy, Matplotlib), Matlab
- **Multi-label Classification on Satellite Images of the Amazon Rainforest**   Jan'18 - May'18
Computer Vision (Advisor: Prof. Arjun Jain)
 - Solved the Multi-label Image Classification problem using **CNN-RNN architecture** with pre-trained VGG-16
 - Explored attention mechanisms for CNN output, achieved **F2 score of 90.25** on a Kaggle
 - **Tools & Technologies:** Python (cv2, PyTorch, pandas)
- **Automatic Image Colorization**   Aug'17 - Dec'17
Digital Image Processing (Advisor: Prof. Ajit Rajwade & Prof. Suyash P. Awate)
 - Converted the training images to LAB colorspace then framed the task as a regression task and trained a simple neural network on extracted SURF in scikit-learn
 - Trained **VGG-16 CNN** model to predict the AB space using the grayscale image as input
 - **Tools & Technologies:** Python (SciPy, cv2, sklearn)

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Java
- **Tools:** Git, Microsoft Visual Studio, \LaTeX

ACHIEVEMENTS

- Achieved **99.84 percentile** in **GATE-2017** CS/IT exam among **96,878** candidates 2017
- Ranked **2nd** in the computer science department in the bachelors program 2015
- Received **2nd** prize for a bachelors project in a CSI Student Chapter's project competition 2015
- Placed in **top 1 percent** of **3,67,674** aspirants in Class XII examination of **Maharashtra State Board** 2011

EXTRACURRICULAR ACTIVITIES

- **Teaching Assistantship** | IIT Bombay Aug'17- May'19
 - Graded lab and exam assignments and assisted in the delivery of exams to over **450+** students for the CS101 Computer Programming & Utilization course for two semesters
 - Resolved student's doubts about Digital Image Processing(CS663) and Computer Vision(CS763) courses
- **Interview Coordinator** | Placement Team IIT Bombay Nov'17 - Dec'17
 - Assisted in the placement of **1600** students within a team of 200 students during the 2017-18 placements