

# Kalpesh Dusane

📍 Bangalore, India

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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