

# KALPESH DUSANE

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## WORK EXPERIENCE

Oracle | Bangalore

C, Java, PL/SQL

Senior Member of Technical Staff

April '22 – Present

Member of Technical Staff

July '19 – April '22

- Working in the **Advanced Queuing** team to provides database-integrated message queuing functionality
- Currently working on a project to seamlessly migrate online from Advanced Queue to Transactional Event Queue
- Implemented and integrated all the primary APIs, including commit and fallback mechanisms, and covered the different datatypes and interfaces (PL/SQL, OCI, and JMS)
- Addressed several complex feature integration issues such as latch and lock handling, concurrency issues, rules handling, queue cache state consistency, and crash recovery scenarios
- Restructured existing implementation AQ-JMS of client code to handle various enqueue/dequeue routing and rollback scenarios
- Developed an API to rename queue objects and their complex internal structures on disk and in memory (for rule set, evaluation context, and subscriber details) and synchronize row cache on multiple RAC instances
- Fixed numerous bugs and tests in several areas, such as export-import, rule engine, application continuity, handling large payloads for the JMS text type, and queue-level security privileges

Cognizant | Chennai

C#, SQL Server, JavaScript

Programmer Analyst Trainee

September '15 – September '16

- 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 maps or other financial documents
- Incorporated the Kendo UI framework and improved front-end functionality
- 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

Persistent Systems Ltd. | Pune

CUDA C++

Project Intern

June '14 – April '15

- Developed a Windows application using **CUDA C++** 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 due to a high degree of parallelism

## RESEARCH & PROJECTS

Depth Estimation of Underwater Images

- Implemented feature point tracking algorithm using **Siamese CNN**
- Used trajectories of feature points to estimate the depth of the underwater image in the different ground base structures, such as piecewise constant or planar structures, using the **multiRANSAC** algorithm
- Conducted a literature study on the effects of dynamic refraction on the sine wave in the distorted images
- Technology:** Python(NumPy, SciPy, Matplotlib), Matlab

Multi-label Classification on Satellite Images of the Amazon Rainforest

- Applied a **CNN Encoder** for the feature extraction and an **RNN Decoder** for predicting actual labels
- Explored attention mechanisms for CNN output, resulting in our highest F2 score of **90.25** on a Kaggle test
- Technology:** Python (cv2, PyTorch, pandas)

Automatic Image Colorization

- Grayscale image converted to RGB color image
- Trained **VGG 16 CNN model** to predict the AB space using the grayscale image as input
- Technology:** Python (SciPy, cv2, sklearn)

## ACHIEVEMENTS

- Achieved **99.84** percentile in GATE 2017 CS/IT exam among **96,878** students
- Ranked **2nd** in the computer science department in the undergraduate program
- Received **2nd** prize for an undergraduate project in a CSI Student Chapter's competition

## EDUCATION

IIT Bombay

M.Tech. in Computer Science & Engineering

July '17 – June '19 CGPA: 8.37 / 10

Pune University

B.E. in Computer Engineering

July '11 – June '15 Percentage: 72.41%

## SKILLS

Programming Languages

- Proficient:** C, C++, Python
- Familiar:** Java, JavaScript
- Tools:** Git, Microsoft Visual Studio,  $\text{\LaTeX}$

## POSITIONS OF RESPONSIBILITY

Interview Coordinator | Placement Team IIT Bombay

- Assisted in the placement of **1600** students within a team of 200 students during the 2017-18 placements season

Teaching Assistantship | IIT Bombay

- Graded lab and exam assignments and assisted in the delivery of exams to over **450+** students for the CS101 Computer Programming & Utilization course