

## Work Experience

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### Barclays, Pune: Software Developer

Since July '19

- Customer Outcome Assurance application:
  - Developed the **entire stack** of the application using **Java, Spring, SQL database** for back-end systems and **JavaScript, HTML** for the front-end.
  - **Key Achievements: Reduced report & statistics generation time** from 5 minutes to under a minute, **digitized the entire process** thus reducing the required human effort.
- Applications to replace legacy systems:
  - Developed applications on **AWS** to replace legacy systems using **Kafka** as messaging queue.
  - **Key Achievements: Improved performance of applications** from 170ms to 90ms per record, helped **reduce technical debt and legacy system license costs**.
- AWS cloud infrastructure design and provisioning:
  - Developed **CloudFormation** templates to deploy modularized components on **AWS cloud**.
  - Developed **Lambdas in Python** for credential rotation, snapshot **EC2** volumes, database user creation, **Autoscaling** groups, **ECS clusters, AWS MSK clusters** to provide a resilient platform.
  - **Key Achievements: Used Service Catalog** products for **single click environment provisioning**, scaling and automated schedules **helped reduce costs for servers**.
- Kafka research and dashboard:
  - Researched and carried out POCs for Kafka for messaging queues within AWS.
  - **Key Achievements: Developed a dashboard** for the control team to **monitor the health of and reconcile errors** on Kafka cluster and applications.

## Tools and Technologies

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- **Languages:** C, C++, Java, C#, Python, SQL, HTML, CSS, JavaScript, GLSL
- **Libraries and Tools:** Spring, Windows System APIs (like GDI, WASAPI, DirectSound), Linux System APIs (like X Windows System, ALSA, ptrace), OpenGL, OpenCV, ImGui, Google Maps API
- **Technologies:** AWS, Kafka, Linux, Git, Matlab, Tensorflow, Unity.

## Internships

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### Accelo Innovations, Mumbai: Computer Vision Developer

August'17 to October'17

- Developed **depth mapping module** (using stereo-vision) in **Python and C** using a two camera setup.
- Integrated **Tensorflow's object detection** with the depth mapping module to identify objects and calculate their distance from the vehicle.

### Truckerrr, Mumbai: Front-end Website Developer

May'16 to June'16

- Designed the **UI/UX** for the website.
- Implemented the **front-end** of the booking system and integrated it with the back-end API.
- Used **Google Maps API** for features such as tracing the path of the vehicle on map.

## Volunteer Work

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### TapTheTech, Mumbai: Flash Animator

March'13 to January'14

- TapTheTech was a group of students who believed MOOCs are the future of education. It went on to become one of the **official learning hubs on Coursera**
- I was one of the core team members and **created content, animations** for the educational videos on the YouTube channel; helped **organize events** in schools to spread awareness about MOOCs

## Projects

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### Linux C Debugger

- Developed a linux **C debugger** using **only system libraries**.
- Some of its features are setting breakpoints; stepping in and out of instructions; displaying and overwriting values of registers and debuggee memory space.

### Cross Platform Layer

- Developed a cross platform layer in **C**. It provides features for window creation, keyboard input, sound playback, software renderer using **Win32 SDK** and **POSIX**.
- Includes '**Record and Playback**' feature that can record input events and play them back; '**Hot-code reloading**' feature that allows immediate reflection of changes in source code in **C** to the state of application.

### Simulation for Development of Autonomous Agents

- Developed a **simulated city** in Unity with **C#** in which vehicles can learn how to drive autonomously.
- Implemented **vehicle mechanics** for the learning agent; traffic and pedestrians to create a learning environment.
- Implemented an **input interface to control the vehicle** via external programs and an **output interface which sends vehicle's data** in realtime to the external program controlling the car.

### OpenGL 3D Model Viewer

- Developed **C/C++ OpenGL** application to load and view '**.obj**' **3d models**.
- Implemented **3d camera system** with perspective projection.
- Implemented **Phong lighting** using ambient, diffuse, specular material properties.

### Movie Booking Website

- Users can register, login, search for movie shows and book/cancel shows using **HTML, CSS, Javascript, MongoDB, Java**.

## Education

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Examination	University/Board	Institute	Year	Results
Graduation	Mumbai	KJSCE, Mumbai	2019	CGPI: 8.56
HSC	Maharashtra	Ruia College, Mumbai	2015	92%
SSC	Maharashtra	PVG's Vidya Bhawan, Mumbai	2013	95.82%

## Papers

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- **Winner of IEEE Technical Paper Presentation** for "Framework for low cost driver-assistance system" in **Abhiyantriki 2017**