Orsu Akhil

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Education

IIT Bombay *July 2015 - July 2019*
Graduation, Bachelor of Technology CPI: 7.19/10
Computer Science and Engineering

Narayana Sri Chaitanya Junior College *2013-2015*
Intermediate Education(+2) Score: 978/1000
Board of Intermediate Education,Andhra Pradesh

Sri Chaitanya Techno School *2013*
Matriculation Education Grade: 9.7/10
Board of Secondary Education,Andhra Pradesh

Credentials

- Secured **All India Rank 117** in **JEE Advanced** out of 150,000 candidates *(2015)*
- Secured **Rank 9** in **AP EAMCET** out of 400,000 candidates *(2015)*
- Secured **All India Rank 483** in **JEE Main (B.Tech)** out of 1.3 million candidates *(2015)*
- Secured **Rank 61** in **TS EAMCET** out of 150,000 candidates *(2015)*
- Secured **All India Rank 261** in **JEE Main (B.Arch)** out of 500,000 candidates *(2015)*

Technical Skills

Programming	**C++**, Python, **Java (Spring Boot framework)**, Bash
Cloud Service	**GCP**, **MS Azure**
CI-CD Tools	**Azure DevOps**, Docker, **Kubernetes**(AKS,GKE, Openshift),Flux GitOps , Istio
WebDevelopment	Django, JavaScript, Angular

Work Experience

Schlumberger India *Pune,India*
Cloud Software Engineer *July'19-Sept'21*

Cloud Native Application Development in MS Azure *Sept'20-Sept'21*

- Developed RESTful micro services based on **Java Spring boot** framework and deployed using **Flux Gitops** based on **Docker,AKS (Azure Kubernetes Service)**, Istio.
- Worked in setting up and maintenance of **CI-CD** automated pipelines in AzureDevOps, service specific configurations and incorporating various security analysis.
- Involved in managing these micro-services focused on **monitoring, high-availability, auto-scaling**.

Cloud Application Development in Google Cloud *Sept'19-June'20*

- Development of features and workflow optimizations of legacy micro services based on **Google Datastore, AppEngine, Storage, Dataflow** Cloud resources.
- Built multi-maven based micro service application having business and cloud provider specific application logic as separate projects. Contributed GCP version of this application to **open source Open SubSurface Data Universe(OSDU)** community.
- Developed an utility library to enable these micro services emit log messages with custom labels in **Google Stackdriver** Logging that help in creating SLI/SLO Definitions and Monitoring.

Pingal Technologies
Mumbai,India

Software Engineering Intern *May'18-July'18*

Stock Prediction using Sentiment Analysis *June'18*

- Worked as Software Engineer to predict the changes in the value of Stocks using the news articles from top financial sites.
- News obtained through Google RSS Feed and the financial sites are scraped using Beautiful Soup Python library, changes in stock values determined through scores derived from analysis of bi-grams in the articles.

State Bank of India
Mumbai,India

Software Engineering Intern *May'17-July'17*

Biometrics in Android Mobile Application *June'17*

- Implementation of the FingerPrint authentication type in the Android Mobile Application using Google FingerPrint API.
- Worked on the Implementation of Face authentication that works by live tracking and auto capture on eye-blink using Google Vision APIs.
- Designed a python based server application to authenticate the facial encodings and is based on python dlib and keras libraries.

Olympiads And Scholarships

- Secured **All India Rank 51** in **KVPY**,Kishore Vaigyanik Protsahak Yojana Exam and awarded Fellowship for students interested in research by the Department of Science and Technology, Government of India *(2014)*
- Selected for the Indian National Mathematics Olympiad **(INMO)** as one amongst the top 35 of my state who cleared Regional Mathematics Olympiad **(RMO)** *(2013)*
- Secured **All India Level Rank 1** in **SIMO**, South Indian Mathematics Olympiad *(2012)*
- Secured **All India Level Rank 11** in **SIChO**, South Indian Chemistry Olympiad *(2012)*
- Recepient of National Talent Search Examination **(NTSE)** Scholarship by The National Council of Educational Research and Training **(NCERT)**,Government of India *(2011)*

Academic Projects

Reinforcement Learning in 2048 game *(Autumn ' 19)*

Guide: Prof. Shivram Kalyankrishnan (Course Project) *IIT Bombay*

- Created and trained a Deep Neural Network based **Reinforcement Learning(RL)** agent that could play the 2048 board game and evaluated its performance based on parameters.
- Neural Network used for Q-Learning algorithm to compute and update Q-values is based on **Tensorflow** and implemented in Python using **Keras** library and **Py-matplotlib** for visualization.
- The game environment is encoded as **Markov Decision Process(MDP)** states and agent plays using ϵ **greedy** exploration and DQN Q-Table for the state-action values trained from samples using **experience replay buffer**.

Pointer Language Compiler *(Spring' 18)*

Guide: Prof. Uday Khedkar *IIT Bombay*

- Created a compiler based on python using **lex,yacc libraries** for a c++ like pointer language to output **Mips** assembly language code.

- Designed parser that extracts lexical tokens, create **Abstract Syntax trees(AST)**, uses **Control Flow Graphs(CFG) and Symbol tables** in determining program flow and scope of variables.
- Handled parsing logic for function calls and function parameters type checks,loops,pointer indirection levels, checks for variable operator expressions using **CFGs and Symbol tables**.

Pacman GhostBusters - AI *(Spring ' 18)*
Guide: Prof. Shivram Kalyankrishnan (Course Project) *IIT Bombay*

- Designing of pacman (Intelligent agent) that use sensors to locate and eat invisible ghosts using **particle filters and dynamic bayes net** in Python.
- Implemented a particle filter to track multiple ghosts simultaneously and various methods to weigh and resample particles based on new evidence
- Each ghost will draw a new position conditioned on the positions of all ghosts in the previous time step(particle filtering with timelapse).

For'dis Forum *(Autumn '17)*
Guide: Prof. Sudarshan (Course Project) *IIT Bombay*

- Developed a Web Application that serves as discussion forum wherein Students and Instructors can share their insights on topics and questions forum.
- Application based on **Django Python framework** , **PostgreSQL** database and uses **HTML,CSS, JavaScript** for the frontend User Interface.
- Implemented various features like topic labels, pin important forums by Instructor and Student, create polls, view and upvote counts for posts, anonymous posts in the application.
- Designed and created the relational database schemas and Django server user interface to support all these features.

Chat Client Application *(Spring '17)*
Guide: Prof. Varsha Apte (Course Project) *IIT Bombay*

- Designed and developed an Android application for real time messaging using **Socket Programming** from scratch with **LDAP** integration support for institutional use.
- Based On **Python** backend with **MySQL** database support and Android Frontend enabling users to register and chat with their buddies.
- Ideated and implemented a database schema for storing users, group chats, friends and friend requests in an efficient manner.
- Enables offline View of messages through Cache and Local Database on mobile and syncs for online data once user logins-in.

ATM Like Machine on FPGA board *(Spring '17)*
Guide: Prof. Supratik Chakraborty (Course Project) *IIT Bombay*

- Developed an ATM simulator on **Spartan6-FPGA board** as the frontend machine using **VHDL** and a **C++** based backend server.
- Used FPGALink library in VHDL for transfer of data via a USB cable between the c++ based host and the FPGA board.
- Implemented **state machines in VHDL** keeping in mind of all possible cases to safe-run the ATM step by step.
- Also Implemented modules for **Encrypted data based on Tiny Encryption Algorithm** in VHDL for secure data transfer.

IITB Acad-Feeder Application *(Autumn '16)*
Guide: Prof. Sharath Chandra (Course Project) *IIT Bombay*

- Developed a multi-purpose Academic Application based on both Android and Web Django Platform.
- Designed an interactive user interface to have a peek through the information like the regular class schedule, submission deadlines and the venue changes.

Checkers Game Simultion *(Autumn '15)*
Guide: Prof. Varsha Apte (Course Project) *IIT Bombay*

- Developed a version of Checkers game(PvP and PvE) using the **Simplecpp Canvas Graphics** library
- PvE Bot Designed on a defensive strategy and uses backtracking algorithm for its moves to safeguard from getting killed.

Extracurriculars

- Completed a year long course under the **NSO**,IIT Bombay in Volley Ball and stood $1^{\mathbf{st}}$ in Institute Freshie Volley Tournament *(2015-16)*
- Participated in Cycling events like Cyclothon conducted by Adventure Club, IIT Bombay comprising of 60 km cycle ride Ride. *(2017)*
- Actively engages in cycling trips.