ABHISHEK UDAYAKUMAR GURAGOL

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Available : May - December 2023 (Internship / Co-op) | May 2024 (Full time)

EDUCATION

Northeastern University , Boston, USA   Sept. 2022-May. 2024
Master of Science - Computer Software Engineering
Courses: Object Oriented Design Principles , Data Science Engineering Methods and its Tools

PES Institute of Technology (Affiliated to VTU), Bangalore, India   Aug. 2016-Aug. 2020
Bachelor of Engineering - Computer Science Engineering
Courses: Data Structures and Applications, Design and Analysis of Algorithms, Unix and Shell Programming, Operating Systems, Artificial Intelligence, Machine Learning, Data Mining and Warehousing, Software Engineering, Computer Architecture

EXPERIENCE

1. **Software Engineer II, Expedia Group , Gurugram, India**   Sept. 2020-Aug. 2021
   - **One check out initiative :**
   - Developing the entire infrastructure to build components that can be used across various sites
   - Included developing gRPC clients and setting up graphQL layers for interaction between the clients
   - Headed the setting up of the front-end of the website (Shared-UI) to move to a Server Driven UI
   - Migrating their existing React components to TypeScript while maintaining 100% test coverage and required code standards
   - **BaseLine Calendar initiative :**
   - Collaborated with teams across the organization to migrate the React calendar component to their TypeScript platform
   - Maintained the required test coverage (90%) while improving reusability
   - Remodeled the component to make sure it could be used across all the platforms of Expedia
   - **Intern Mentorship :**
   - Mentored interns in completing their project which was later moved into production

2. **Software Engineer I , Expedia Group , Gurugram, India**   Jul. 2020-Aug. 2021
   - **Header-Footer Service :**
   - Worked on the back-end services responsible for the headers and footer of Vrbo.com
   - Increased test coverage to 100%, reducing manual validation while also providing greater flexibility
   - Migrated the translation platform to an automated platform (BabelPrime) which improved and reduced the efforts while automating the CI/CD pipeline needed to add translations required for various sites
   - **Vrbo Site :**
   - Remodeled the search bar component of the entire site that managed to improve the user experience and also the conversion rate of the site
   - Built tooltips on various components to improve the accessibility as well as the overall flow of the user experience on the site which helped in increasing the traffic to our booking page

3. **Co-Founder, Vincere Solutions, Bangalore, India (**www.vincere-solutions.com**)**   Aug. 2017-Aug. 2020
   - Developed a web application in JavaScript for the early diagnosis of Intellectual Disability in children
   - Used custom data collected at a local hospital's psychology department to train a model for diagnosing borderline cases
   - Built database using MySQL, later migrated to Firebase, to store test results and personal details encrypted using AES

PROJECTS

Script StoryBook Generator [NU - Fall 2022]
   - Developed a python application that made use of OpenCV, NumPy, Pandas to generate a storybook from images and a collection of dialogues
   - Modeled the software to utilize various OpenCV operations such as medianBlur, adaptiveThreshold to model the images which was then stitched in the form of comics strips with dialogues stored in the FireBase backend

Genetic Algorithm Simulator [PESIT - 2020]
   - Developed a web based application to demonstrate how genetic algorithms can be utilized to map disaster affected areas easily and effectively.
   - Utilized swarm robotics as the hardware front while combining genetic algorithm (Ant Colony Optimization) in the software front
   - Built rovers to simulate mapping aspect using Arduino board

Semantic Segmentation of the Key Regions of the Eye [PESIT - 2018]
   - Published as two papers - Paper 1: 10.3233/JIFS-189858 and Paper 2: 10.1007/978-981-16-9885-9_36
   - Improved the accuracy of image segmentation (mIoU 0.9641) using the temporal information present in a video extracted from an AR/VR headset
   - Experimented with various models such as U-Net, LinkNet, and PSPNet with various backbones such as VGG, ResNet, and ResNeXt
   - Experimented with various loss functions such as Dice Loss, Categorical Focal Loss, and Jaccard Loss
   - Built a light-weight two-step classifier to balance the speed and accuracy of the segmentation for low-cost time sensitive systems while looking into the promise of pipelined models
   - Researched into techniques such as Gaussian Blurring, CLAHE, Conditional Random Fields (CRF), and Superpixeling

TECHNICAL SKILLS

- Languages: Java, R, Python, C++, JavaScript, HTML, CSS, C, SQL, React
- Database: Firebase, MYSQL
- Misc.:   Jenkins, GitHub, TensorFlow, Keras, Pandas, NumPy, OpenCV, Machine Learning, Computer Vision, Jupyter Notebook, Matplotlib, TestComplete, Software Development, PyTest