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Muhammad Ali

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Technical skills

Programming Languages	Java, JavaScript/TypeScript, C#, Dart, Python, Swift
Mobile	Flutter, iOS, XCode
Web	Node.js, React.js, Express.js, Spring Boot, Redux, MongoDB, Django, jQuery, HTML, CSS
Cloud	Azure Cloud Platform
Data Analysis	MATLAB, Hadoop (MapReduce), CPLEX, GAMS, Selenium
HPC	MPI, CUDA, OpenMP
Testing	Junit, JaCoCo, Postman, PIT
Supporting Skills	TCP/IP, Git, Unity3D, Raspberry Pi, Linux, Bash

Professional Experience

Software Engineer — **Paycor** *Frisco, TX* — **Mar 2020 – Apr 2020 (COVID lay-off)**

- Developed front-end features for the Marketplace team using React.js.
- Exposure to Azure Cloud Platform.

Software Engineering Intern — **Baarei** *San Francisco, CA* — **Jun 2017 – Dec 2017**

- Developed an AI driven event planning/management system that allows participants to collaborate efficiently.
- Developed REST APIs and user authentication using OAuth in Python (Django).
- Developed AI driven bot using Google's Dialog Flow API for NLP.

Software Engineering Intern — **Educative, Inc** *Bellevue, WA* — **May 2016 – Jul 2016**

- Developed ruby language port for their course on programming interview preparation.
- Converted solutions for programming puzzles from javascript to ruby.

Education

MS Computer Science — **University of Texas at Arlington (UTA)** *Arlington, TX* — **Dec 2019**
GPA: *4.00/4.00*
Algorithms, Software Engineering & Testing, Parallel Programming

BS Computer Science — **Lahore University of Management Sciences (LUMS)** *Lahore, Pakistan* — **Jun 2017**
GPA: *3.52/4.00*
Computer Networks, Advanced Programming

Projects

Critical node analysis in network infrastructures (Research)

- Designed a model to capture dependencies in infrastructures and simulate failure propagation using convex optimization.
- Implemented the model using GAMS with CPLEX solver to compute strategies that an adversary is likely to take in order to attack a certain infrastructure.
- The model also calculates the best strategies to defend a system under an attack.

Quality assessment model for tone mapped images using AI

- Performed in depth study and analysis of existing quality assessment techniques for tone-mapping operators, functions to convert HDR images to LDR.
- Designed and Implemented a Deep Learning based model in MATLAB that outperformed several existing state-of-art techniques in terms of correlation with subjective assessment.

DropBin

- Designed and implemented a dropbox-like file synchronization system in Java over TCP/IP socket connection.
- Featured changes to the local directory to be replicated on the server side as well as other devices linked by the user.
- Supported features like sharing with other users, conflict detection.

Maze-Solving Robot

- Developed a robot in a team, capable of solving a maze while potting colored balls along the way.
- Programmed the robot for navigation given the image of the maze in Arduino C.