Apar Pokhrel

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Education

The University of Texas at Arlington **May 2022**
Bachelor of Science in Computer Science *CGPA: 3.81/4.0*
Minor in Mathematics

Technical Skills

Languages: C/C++ (**3.5+ years**), Python (**2+ years**), JavaScript, HTML/CSS, Java, Matlab, MySQL (**2 years**)
Tools: VS Code, GitHub, Git, LaTeX, Google Colab, Jupyter, Eclipse, Arduino, gcc/gdb
Technologies/Frameworks: Windows, Linux, MacOS, ReactJS, NodeJS, TensorFlow, Keras, Pandas

Experience

Peer Academic Leader **August 2021 – May 2022**
University of Texas at Arlington *Arlington, Texas*

- Supervised and instructed UNIV freshmen courses (Fall 2021 & Spring 2022) under the Office of New Student Courses.
- Individualized lesson plans for a class size of 33 students on academic and student affairs policy, social opportunities, major exploration, engineering practices, critical thinking skills, and other areas of academic and student success.
- Maintained official university course records, documented student progress, accomplished varied clerical tasks, and performed other duties as required.

Projects

Your Disney Movie Dataset | *Python, Goggle Colab* **May 2022**

- Utilized web scraping to extract Wikipedia's Infobox contents from Disney movies using the BeautifulSoup library.
- Cleaned and filtered data to create a final dataset which houses 520 Disney movies and generated GET requests to attach IMDB/Rotten Tomatoes ratings using OMDb API.

The Drowning Robots | *C/C++, Python, ReactJS* **August 2021 - April 2022**

- Represented UTA for the IEEE Region 5 Student Robotics Competition.
- Collaborated on designs and build for an underwater ROV capable of performing dive, submerge, and travel maneuvers underwater with varied level of autonomy.
- Designed a User Interface for the ROV that utilizes a HTTP server/client for mechanical controls and wireless video streaming, and integrated Axios API to send HTTP messages for serial communication.

Traffic Signs Classification and Recognition | *Python, Keras, Tensorflow* **August 2021 - December 2021**

- Built a deep neural network that can classify traffic signs from the GTSRB public dataset.
- Classified images into relevant classes using a LeNet CNN model with a training accuracy of 98 % .
- Designed a simple GUI for the image classifier to allow users to upload an image and predict the class and traffic sign.

Pokédex | *Javascript, Rest API* **March 2021**

- Created a light-weight web application hosted on *Netlify* and improved User Interface using style sheets.
- Generated GET requests and filtered JSON strings to create a catalog of 897 Pokémon based on their ID and attributes using PokéAPI .

Operating Systems | *C/C++* **August 2020 - December 2020**

- Implemented a user space shell application capable of interpreting a FAT32 file system image based on FAT32 File System Specification without the use of any existing kernel code or utility functions.
- Designed a program with self-implemented data structures for dynamic memory allocation functions capable of performing heap management using page replacement algorithms.
- Designed a bash shell for UNIX using low level system calls to create and manage processes supporting user commands.
- Modified and re-built a CentOS Linux kernel to support new system calls with added functionality of process metrics.

Poker++ | *C++, gtkmm* **January 2020 - May 2020**

- Designed a gtkmm application that allows a multi-player Texas Hold 'em poker game using low-level I/O programming.
- Implemented a client-server architecture model for the dealer and client(s) using the Boost ASIO library and encoded communication on a JSON interface.