Anand Kumar

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🎓 EDUCATION

BS in Computer Science, *Habib University* ↗   2018 – 2022 | Karachi, Pakistan
CGPA: 3.76/4.00

💼 PROFESSIONAL EXPERIENCE

Associate Software Engineer, *Securiti.ai* ↗   Jun 2022 – present | Karachi, Pakistan
- Delivering customer-specific features by leveraging the **VueJS** framework
- Performing code reviews to ensure adherence to coding standards and optimize **JavaScript** code.
- Effectively interpreting the Product Requirements Document (PRD) to understand desired functionality.
- Skilled in debugging non-functional code to ensure optimal performance.

Web Development Intern, *Appick* ↗   Aug 2021 – Oct 2021 | Karachi, Pakistan
- Developed multiple projects using **VueJS**
- Utilized **Bootstrap-Vue** to develop engaging and responsive front-end designs.
- Integrated front-end with back-end systems using **Axios** to ensure seamless communication.
- Implemented effective state management using **Vuex** to enhance website functionality.

SQA Engineering Intern, *Securiti.ai* ↗   Jun 2021 – Aug 2021 | Karachi, Pakistan
- **Python3 Comparison Program:**
  - Created a **Python3** program that scrapes HTML source code and captures screenshots of Securiti's product portal and public website.
  - The developed program compares the HTML source code and screenshots of different builds and identifies differences using bounding boxes.
- **Portal Development:**
  - Designed and developed a full-stack solution to showcase differences pointed out by the Python3 program.
  - Implemented engaging and responsive front-end using the **VueJS** framework
  - Leveraged **PHP** for robust back-end development
- Demonstrated proficiency in **Python3** development, full-stack solution design, **VueJS,** and **PHP**.

Web Development Intern, *FinPocket* ↗   Jan 2021 – Feb 2021 | Karachi, Pakistan
- Developed the front end of their web app using **VueJS**

Assistant Instructor, *Circle Pakistan*   Jun 2020 – Oct 2020 | Karachi, Pakistan
- Researched and helped design daily class content and assist/conduct live classes.
- Coordinate with Lead Instructor for assignments, projects, and quizzes and their correction.
- Help the team with the admission process by interviewing and screening students.

Web Developer, *Saaya Pakistan* ↗   Jun 2020 – Aug 2020 | Karachi, Pakistan
- Developed a website for Saaya Pakistan NGO using **WordPress** as a voluntary project.
- Designed and customized the website to meet the organization's needs and specifications.
- Incorporated responsive design and ensured website accessibility.

Web Assistant, *Habib University*   Dec 2019 – Feb 2020 | Karachi, Pakistan
- Successfully set up a **Linux**-based web hosting server for instructors to have personal webspace.
- Configured server to allow instructors to upload personal websites, portfolios, lectures, and other related content.
- Responsible for maintaining and testing the server until all requirements were met.

Teaching Assistant & Peer Tutor, *Habib University*   Karachi, Pakistan
- **Courses:**
  - Computer Architecture (Spring 2022), Computer Architecture (Spring 2021), Data Structures & Algorithms (Spring 2020), Peer Tutor for C++ (Summer 2020), Peer Tutor for C++ (Winter 2020)
- Assisted students during labs, and helped them to solve their queries on assignments, labs, and lectures.

🧠 TECHNICAL SKILLS

Programming Languages:
Python3, C, C++, JavaScript, PHP

Deep Learning Tools:
PyTorch, TensorFlow, Pandas, NumPy

Frontend Skills:
HTML, CSS, Vue.JS, Nuxt.JS, Bootstrap, Vuetify

Databases Management:
MS SQL Server, MySQL Server, MongoDB

Application Development using Flutter

Management tools:
GitHub, BitBucket, JIRA, Git

WordPress Development

IDE's familiar with:
PyCharm, VS Code, Apache NetBeans, Visual Studio

📂 PROJECTS

Saathi - An Urdu Virtual Assistant for Elderly, *Capstone Project (Final Year Project)*
- Developed an **Urdu conversational agent** that acts as a virtual companion for elderly people in Pakistan. It facilitates them in their daily tasks such as making calls and sending messages, playing predefined playlists, giving medicine reminders, alerting the elderly to charge their phones, and more, using their voice in the Urdu language.
- The front-end of the application was built using **Flutter**, **Firebase** was used for the back-end and the conversational agent was designed using the **RASA framework** in **Python3**.
- Built an NLP pipeline for the Urdu language consisting of a tokenizer, tagger, parser, and a named entity recognition module using the **SpaCy library** in **Python3**.
- Fine-tuned three **deep learning** models to generate text in the Urdu language in response to an Urdu input to construct an **open-book question-answering system**.

Urdu Speech Emotion Recognition Using Voice (Python3), *CS 351 Artificial Intelligence*
- Extracted audio features such as MFCCs, Chromagram, and Mel-spectrogram from Urdu audio files.
- Built an Artificial Neural Network using the **Tensorflow** library in **Python3**, to classify Human Speech Emotions based on their voice in the Urdu Language.

Flight Simulator (C++), *CS 440 Computer Graphics*
- Implemented a flight simulator using the **WebGL** (Web Graphics Library) in **C++,** rendered on a GPU.
- Generated an infinite varied terrain for the simulator with flat, smooth, and Phong shading.
- Implemented basic flight dynamics with their key mappings (pitch, yaw, roll)

Ray Tracer (C++), *CS 440 Computer Graphics*
- Built a ray tracer in **C++** with several features including ray casting, shading, different light sources, and Bounding Volume Hierarchy acceleration structure
- Rendered varying resolution scenes on the ray tracer
- Compared the rendering times with and without the acceleration structure

Convolutional Nueral Network (CNN) (Python3),, *EE 452 Computer Vision*
- Built a Convolutional Neural Network using the **PyTorch** library.
- Trained it on the CIFAR-10 Dataset and achieved an accuracy of 80% on the validation dataset.

Deep Convolutional GAN (DCGAN) (Python3),, *EE 452 Computer Vision*
- Built a Deep Convolutional GAN using the **PyTorch** library.
- Implemented a CNN-based discriminator and transposed convolutions-based generator.

HU Evaluation System (Website), *CS 353 Software Engineering*
- Designed and developed a website using **VueJS** for frontend and **Django** for the backend
- The website enables students to evaluate instructors of Habib University and gives students clear reviews about the instructors. The reviews are available to the entire student body and the instructors

Eco Planet Game (C++), *CS 224 Object Oriented Programming*
- Developed an endless runner game using **C++** and the **SDL** library
- The gameplay aims to teach the effects of polluting the planet Earth and how pollution can be reduced.

HU Course Schedule Generator (Python3), *CS 102 Data Structures & Algorithms*
- The program generates all the possible weekly schedules of the selected courses.
- The back-end uses an algorithm to generate the possibilities and the front-end was developed using **Tkinter** library.