Anand Kumar

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https://github.com/AnandKumarRajpal/ https://anandkumarrajpal.netlify.app/ Karachi, Pakistan

EDUCATION

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

Intermediate, *D.J. Sindh Government Science College* 2016 – 2018 | Karachi, Pakistan

Matriculation, *St. Patrick's High School* 2016 | Karachi, Pakistan

PROFESSIONAL EXPERIENCE

Associate Software Engineer, *Securiti.ai* Jun 2022 – present | Karachi, Pakistan
- Primary work involves developing the front end of the product using the **VueJS** framework.
- Developing new features in accordance with customers' requirements.
- Performing reviews for maintaining standards and identifying inefficient JavaScript code.
- Understanding the required functionality from the Product requirements document (PRD).
- Debugging non-functional code.

IT Consultant, *Saaya Pakistan* Aug 2020 – Present | Karachi, Pakistan
- Voluntarily maintain Saaya Pakistan's (NGO) website including optimizing it, updating the content, and continuously adding required features.

Web Developer, *Appick* Aug 2021 – Oct 2021 | Karachi, Pakistan
- Developed multiple websites using **VueJS**
- Developed the frontend of the projects using the **Bootstrap-Vue**
- Integrated frontend with backend using **Axios**
- Implemented state management using **Vuex**

SQA Engineering Intern, *Securiti.ai* Jun 2021 – Aug 2021 | Karachi, Pakistan
- **Python3 Comparison Program:**
  - The program scrapes the HTML source code and captures the screenshot of the daily build of their product's web portal and public website.
  - The program then compares and points out the differences in the various deployed builds using bounding boxes.
- **Portal Development:**
  - Developed a full-stack solution (portal) to present the differences pointed out by the **Python3** program.
  - The frontend was implemented using **VueJS** and the backend used **PHP**.

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

Web Developer, *Saaya Pakistan* Jun 2020 – Aug 2020 | Karachi, Pakistan
- Voluntarily developed the website for Saaya Pakistan NGO using **WordPress**.
- Link: https://saayapk.org

Web Assistant, *Habib University* Dec 2019 – Feb 2020 | Karachi, Pakistan
- Set up a **Linux**-based web server for the instructors, to provide them with a web space where they can upload their lectures, portfolios, projects, etc.
- Maintained the server, until proper testing was done.

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, Bootstrap, Vuetify*

Databases Management: *MS SQL Server, MySQL Server, MongoDB*

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

Application Development using Flutter

WordPress Development

LaTeX writing

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 if a low battery is detected, 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 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 Emotion 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.

Digital E-Voting System, *EE/CS 172/130 Digital Logic Design*

- Designed a digital voting system using **FPGA**, logic gates, led display, 7-segment display and many more components.
- The front-end was developed in **Python3** using the Tkinter library.