Raghav Kaul

Tempe, AZ • (602) 587-6935 • rkkaul@asu.edu • raghavkaul.com • linkedin.com/raghavkaul

EDUCATION

Arizona State University, *Tempe, Arizona*   **Aug 2019 – May 2021**
Master of Science in Computer Science, **GPA: 3.75/4**
Selected Coursework: Compiler Design, Artificial Intelligence, Statistical Machine Learning, Data Processing at Scale, Data Mining, Data Visualization, Human-Computer Interaction, Mobile Computing, Semantic Web Mining

Manipal University Jaipur, *Rajasthan, India*   **Aug 2015 – May 2019**
Bachelor of Technology in Computer Science, **GPA: 8.14/10**
Selected Coursework: Design and Analysis of Algorithms, Relational Databases, Operating Systems, Software Engineering, Python Programming, Advanced Computer Networks, Big Data Analysis

TECHNICAL SKILLS

Languages/Databases: Python, C++, C, Java, JavaScript, SQL (MySQL, MSSQL, PostgreSQL), NoSQL (MongoDB, DynamoDB)
Frameworks/Libraries: NumPy, Pandas, Selenium, Matplotlib, Scikit-learn, Keras, OpenCV, NLTK, PyTorch
Misc: Tools: Git, GitHub, Bash, AWS, Docker, Agile Development, RESTful APIs, Linux, Jupyter Notebook, Postman, Tableau, Axure RP, LaTeX; Web: HTML, CSS, Node.js, Flask, Bootstrap, WordPress, jQuery; **Certifications:** AWS Certified Cloud Practitioner (link)

WORK EXPERIENCE

Web Developer Intern, Aeeiee, Inc, *Tempe, Arizona*   **Jun 2020 – Aug 2020**
- Launched an online museum with Augmented reality and 3D viewing experiences using Apple's WebKit and Divi in WordPress.
- Built and integrated a responsive 3D-model viewer using three.js and jQuery that showcased museum sculptures interactively.
- Resolved 2 server-side/client-side issues concerning multiple user logins and user disconnection for a RESTful captive portal.

Project Coordinator Assistant, University Technology Office (ASU), *Tempe, Arizona*   **Oct 2019 – May 2020**
- Optimized resource capacity planning for 60+ members of the Cloud Acceleration teams resulting in a 30% increase in logged and planned time reporting in Jira.
- Wrote 20+ queries in Jira Query Language (JQL) that filtered employees based on different use cases, which significantly increased time reporting visibility for product owners and scrum masters.
- Attended product meetings and monitored teamwork plans to document action items and major decisions in Confluence.

Software Engineer Intern, Decimal Technologies, *Gurugram, India*   **Jan 2019 – May 2019**
- Led a team of 2 in developing an Optical Character Recognition (OCR) scanner that extracted text data from 4 identity documents.
- Applied image and text processing techniques such as automatic cropping, image transformation, and RegEx considerably improving the OCR engine's performance. Tested application on 15+ document samples obtaining an accuracy of 90.48%.
- Deployed the service as a serverless web application on AWS Lambda using Flask and Zappa, allowing users to upload images and view the extracted text as a JSON response.

PROJECTS

Named Entity Recognition and Classification *(Python, ngrok, React, Named Entity Recognition, NLP)*   **Jan 2021 – Apr 2021**
- Engineered a full-stack application to display named entities (person, place, organization) from a given text. Trained 5 NLP models on the CoNLL-2003 dataset achieving highest micro and macro f1 scores of 0.961 with BERT and 0.896 with BERT+CRF resp.
- Managed a team of 7 in the design and development of frontend and backend modules. Wrote 4 React components for the user interface and devised a trained model API using flask-ngrok that omitted server-side costs.
- Utilized Chart.js to display the total number of predicted entities and types of entities between each model for added model insight.

Covid-19 Health Monitoring Application *(Java, Android Studio, SQLite, Mobile App Development)* (demo)   **Sep 2020 – Dec 2020**
- Designed an Android application that measured a user's heart rate and respiratory rate using built-in mobile sensors. The app also allowed users to log and track 10 Covid-related symptoms.
- Calculated heart rate within 30s by detecting peaks from variations in red pixels when users placed their index finger on the camera.
- Utilized accelerometer sensor data along the z-axis to calculate the respiratory rate and stored all values in an SQLite database.

Compiler Design Projects *(C++, Bash Scripting, Ubuntu)*   **Jan 2020 – Apr 2020**
- Implemented a compiler from scratch by linking instruction nodes supporting I/O, assignment, conditional, and looping statements.
- Performed lexical analysis automatically for a provided list of tokens and corresponding regular expressions. Designed a lexical analyzer that consumed the input and displayed token and lexeme pairs.
- Constructed a parser and error handler for a small language enforcing 25+ syntactic and semantic rules.

ACTIVITIES

Graduate Teaching Assistant, 'Principles of Programming Languages', Arizona State University   **Jan 2021 – May 2021**
- Responsibilities included holding office hours, writing flawless project solutions, and grading submissions for 150+ students.