Aditya Jadhav

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Education

University of Arizona Tucson, Arizona

Bachelor of Science, Computer Science (Minor: Data Science and Stats) ***January 2021 - December 2024***

GPA: 3.93/4.0 Global Wildcat Scholar

Technical Skills

Proficient Languages: Python, Java, C, SQL, JavaScript, Haskell, Lucene

Libraries: Pandas, Matplotlib, NumPy, Scikit-learn

Frameworks: ReactJS , RESTful APIs, NodeJS, Flask, Docker, Git, CMake

Experience

Undergraduate Research Programmer May 2021 – Jan 2023

University of Arizona - ToMCAT Project | ***Python, Linux, Git, JS, Flask, C++***

- Developed a visualisation dashboard to display captured sensor data using wxWidgets, MQTT and C++. Achieves monitoring of data and various parameters in 50+ tests, with 2 devices updating data every few ms.
- Built a Flask application using Python, GoogleSpeech API, HTML, CSS and JavaScript to record entrainment data such as speech, video , LSL synchronised data which is later analysed by a social scientist team.

Undergraduate Research Assistant Feb 2023 - Present

University of Arizona | ***Python, Scikit-learn, NumPy, Bash***

- Currently researching under Dr. Chicheng Zhang on Active Learning using early stopping gradient descent under Tsybakov Noise. Developing an ActivePSGD algorithm to optimize for training labels in Python, Scikit-learn.

Senior Teaching Assistant - CSc 335 (Object Oriented Programming) Jan 2022 – Present

University of Arizona | ***Java, JavaFX, Maven, Discrete Math***

- Schedule feedback meetings, assist with grading, hold office hours, develop coursework, help in training new TAs.

Projects

Chess Website | ***React, NodeJS, Express, SQL, AWS***

- Engineered an online chess platform, supporting 1000 simultaneous players, utilizing Express (backend), NodeJS (StockFish engine), React (frontend), Socket.IO (multiplayer), and AWS RDS/SQL (user/puzzle data).
- Infrastructure tasks: built AWS dev environments, configured DB, wrote Python scripts to preprocess and populate postgresql DB with puzzle data .

YouTube Summary Chrome Extension | ***GCloud, GPT, Notion API, NodeJS, Express, Python, JS***

- Created a Chrome extension leveraging Google Cloud Speech-to-Text and GPT-3.5 to transcribe and summarize YouTube video currently being watched on browser, using Node.js and Express for backend processing.
- Integrated the Notion API and OpenAI API in Python, enabling users to export video summaries directly to their Notion workspace, enhancing content organization and accessibility.

Open Source Contribution to Lichess.org | ***TypeScript, Scala***

- Fixed a bug on Lichess.org (2nd largest chess website in the world/ largest open source chess platform) that allowed player rating range selection when creating a new game, enhancing the game setup process. Addressed a time limit issue, setting the max time limit for each move played in a rated game to 60s, improving game play consistency.

IBM Watson-Inspired Q&A Program with Web Crawling | ***Java, Lucene, HuggingFace, Python***

- Constructed a Q&A program akin to Watson by indexing Wikipedia pages, applying Information Retrieval, NLP techniques and used HuggingFace models for likely answers. Also use a Python Web crawler along with BeautifulSoup4 to extract text from Wikipedia pages. Enhanced accuracy iteratively from **15%** to **35%**

Relevant Coursework

- Unix and System Programming
- Deep Learning
- Text Retrieval and Web Search
- Database Design
- Computer Networking
- Web Development
- Data Structures and Algorithms
- Computer Organisation
- Software Development and OOP
- Compilers
- Cloud Computing
- Functional Programming