Arif Syraj

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Education

University of San Francisco San Francisco, CA
Master of Science, Computer Science *August 2023 – December 2025*
Relevant Coursework: Principles of Software Development, Foundations of A.I., Systems Programming, Software Development Lifecycle, Cloud Computing

University of Illinois at Urbana-Champaign Champaign, IL
Bachelor of Science, Mechanical Engineering *August 2016 - May 2021*
Relevant Coursework: Discrete Structures, Data Structures & Algorithms, Database Systems, Linear Algebra

Technical Skills

Programming Languages: Python, Java, C, C++, JavaScript, HTML5, CSS3, SQL
General: Finetuning, Prompt Engineering, Agile, Data Scraping, Shell Scripting, Containerization, Multithreading, CI/CD, Automated Testing, Cloud Deployment, Network Protocols
Frameworks/Tools: Linux, AWS, GCP, Docker, ROS, pytorch, tensorflow, MongoDB, React, Node.js, Express, JUnit

Experience

Software Engineer March 2021 – July 2022
EarthSense, Inc. *Champaign, IL*

- Designed an algorithm to estimate plant height using noisy LiDAR data collected by our phenotyping robot, cutting error by >50% across datasets over the previous algorithm and beating accuracy of manual measurements.
- Revamped robot autonomy by designing a crash detection algorithm fusing LiDAR and odometry data collected from various environments, reducing overall false positives and negatives by 75%.
- Greatly decreased need for manual waypoint recording by implementing automatic waypoint generation on turns, saving customers several minutes per data collection and improving robot autonomy.
- Introduced a culture of documentation in our workflows for libraries and testing methodologies, which I later used to onboard interns for a summer.
- Extensively tested robot system functionality, standardized testing methodologies and created utility shell scripts, helping catch several system bugs before deployment to customers.

Projects

LLM's To Detect Chart Misinformation August 2024

- Finetuned a multi-modal LLM to detect visual misinformation in bar charts using LoRA and 2.3k examples.
- Resulted in a model that can identify visually manipulated bar charts 90% of the time.

Craigslist Apartment Scraper July 2023

- A containerized Python web-scraping script that enables a user to browse hundreds of ads for rental accomodation on Craigslist in a fraction of the time it would take to do so using the website.
- Scraped results are output to HTML files in a readable manner according to a list of user-specified constraints on commute time, rent, number of bedrooms, location, shared versus whole apartments, and more.
- Allows a user to easily see commute times to a specified location by foot, bike, and car. This data is queried from OpenStreetMap and can be used to sort listings according to travel time buckets by a chosen mode of transport.

Syllabus Generator May 2024

- Used low-cost LLMs and crewAI to coordinate the automatic generation of a syllabus using basic course info.
- Implemented prompt engineering techniques to optimize syllabus section generation, significantly improving output quality and relevance.
- Developed a microservice using FastAPI that talks to large LLM's like ChatGPT for automated syllabus generation.

Awards/Publications

University of San Francisco Computer Science Scholarship - Merit Based Award May 2023
EnterpriseWorks Top Summer Intern Award July 2021

- Received a summer intern award in the 'Best Technical Innovation' category by the EnterpriseWorks Incubator.