Soumil Gad

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Education

Bachelor of Science: Computer Science — ***Expected 2025***
University of California, Davis — **Davis, CA**
- Major GPA: **3.9**
- Cumulative GPA: **3.6**

Relevant Coursework: Data Structures, Algorithm Design and Analysis, Discrete Math, Linear Algebra, Calculus I, II, III, Probability and Statistical Modeling

Skills

Programming Languages: Python, C/C++, HTML, CSS, JavaScript, MATLAB, SQL
Tools: Git, Jupyter Notebook, Pandas, Numpy, Scikit-learn, Tensorflow, OpenCV, Microsoft Excel, Docker, Kubernetes, Figma, Postman, PostgreSQL

Experience

Software Engineering Intern — ***Jun 2023 - Sep 2023***
Vianai (https://www.vian.ai/) — **Palo Alto, CA**
- Participated in Scrum development for the platform team, focusing on monitoring machine learning models for critical indicators like risk and data drift
- Implemented unit tests for the platform's different microservices, resulting in a notable 13% enhancement in code coverage
- Developed a REST API endpoint, critical to the key model comparison platform feature. Effectively orchestrated the related changes in all the backend services
- Enriched platform capabilities and product offering by introducing backend functionality for a new multiclass classification model monitoring feature
- Created and implemented a vital registry, along with its CRUDS operations in our database to support a new custom metrics feature. Implemented rapid iteration during development based on feedback and requirements from multiple teams. Additionally, prepared a customer-facing showcase of this feature
- Conducted research on upcoming LLM monitoring service, provisioning a topic modeling algorithm to perform density-based clustering of in-house LLM embeddings - allowing tabulation and visualization of the model's performance from baseline to target

Director of Business / Project Manager — ***Sep 2022 - Present***
Aggie Sports Analytics (https://aggiesportsanalytics.com/) — **Davis, CA**
- Oversee club fundraising and external and internal affairs. Responsible for strategies to improve club marketability, and acquire partnerships and clientele
- Leading workshop with UCD Women in Computer Science, fostering collaboration between club members, and facilitating mutual growth for clubs
- Acquired United States Fencing Association as a client, and currently manage our project for them. Liaise with them and our team, and communicate product requirements to our team. Research and storyboard technical components of the project for more streamlined development

Undergraduate Researcher — ***May 2023 - Present***
UC Davis Computer Security Lab (https://seclab.cs.ucdavis.edu/) — **Davis, CA**
- Work with Professor Felix Wu to research vulnerabilities and reduce hallucinations in large language models
- Developing 'EthikOS', a concept to allow large language models to truth check themselves within the prompt-response pipeline
- Executed controlled experiments to evaluate how different prompt injections impact GPT-3.5's performance, and devised appropriate countermeasures

Computer Science Tutor — ***Mar 2023 - Sep 2023***
CS Tutoring Club at UC Davis (https://sites.google.com/view/cs-tutoring-ucd/) — **Davis, CA**
- Tutored students in computer science courses from Intro to Computer Science through Data Structures and Algorithms
- Employed unique teaching methodologies to effectively enhance each student's learning

Projects

CryptoCheck (https://github.com/soumil101/cryptocheck) — ***Jul 2023 - Present***
- Full stack web application to display a heavily customizable dashboard, allowing users to track whichever cryptocurrency news and prices they want
- Developing a full-feature trading bot, which users can customize to trade certain coins with certain market strategies
- Utilizing connection to Coinbase Pro websocket to fetch and format the latest prices every second and a PostgreSQL database to store user accounts and transaction history; supporting Binance and Coinbase orders through their respective private APIs on a per-user basis

Wikipedia Speedrun Website (https://github.com/soumil101/WikipediaSpeedrun) — ***Aug 2023 - Sept 2023***
- Developed a dynamic web app to gamify the challenge of navigating from one Wikipedia page to another, using only intra-Wikipedia links for traversal
- Utilized Wikipedia API to generate a starting and end page for the speedrun, regenerating upon errors, for a more seamless user experience
- Used Selenium to web scrape articles and a fine-tuned GPT-3.5 model to provide brief article summaries tailored to the context of the game, filtering out less useful details and including the more useful ones such as location and time period
- Implemented a real-time, sortable, leaderboard, stored on Redis, where players can post their times and easily compare and compete against other players

Penalty Kick Encroachment Tracker (https://github.com/AggieSportsAnalytics/PenaltyEncroachment) — ***Mar 2023 - Jul 2023***
- Led a team to develop an automated Penalty Kick Encroachment tracker using computer vision
- Utilized YOLO object detection model to deliver accurate player tracking through real-time and at a stable frame rate
- Implemented a custom algorithm to detect a player's team based on jersey color, regardless of their orientation or lighting
- Labeled 250 frames over 800 epochs in combination with hough line transformations to train the program to detect the edges of the penalty box accurately

2022 FIFA World Cup Simulator (https://github.com/AggieSportsAnalytics/WorldCupPredictor) — ***Oct 2022 - Nov 2022***
- Built a Monte Carlo prediction model for the 2022 FIFA World Cup, using a random forest classifier model for training
- Created a machine learning model - trained on a dataset of previous team performance - to generate matchup predicted probabilities for each team