Uday Goyat

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Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science in Computer Science, GPA: 4.0, Faculty Honors *Expected Graduation: May 2025*

Selected Coursework: Data Structures & Algorithms, Design & Analysis of Algorithms, Probability & Statistics

Experience

Software Engineer Intern May 2023 – August 2023

MathWorks *Boston, MA*

- Created feature based testing framework to investigate and resolve over 40 critical bugs concerning visual signal data in the Simulink scope, addressing waveform display accuracy, peak detection algorithms, bilevel signal representation, and signal data integrity.
- Enhanced an internal JavaScript automated testing framework by implementing simulated cursor dragging functionality for visual verification and performance testing in MATLAB Release 2024a.
- Created an automated system to generate and execute over 6000 tests using JavaScript and MATLAB to ensure the reliability and effectiveness of the deployed Simulink Scope.

NLP Researcher August 2022 – Present

Georgia Institute of Technology *Atlanta, GA*

- Webscraped over 10 million comments on Twitter and Nairaland using BeautifulSoup and Scrapy to gain insights into the controversy surrounding the death of Nigerian President Buhari.
- Employed BERT-derived models for topic modeling, and sentiment analysis coupled with community detection algorithms to identify the 7 most influential agents spreading a specific narrative.
- Delivered meticulously curated misinformation data to fact-checking organizations.

Software Engineer Intern June 2020 – June 2022

New College of Florida *Sarasota, FL*

- Utilized C++ and NumPy to implement 5 pitch detection algorithms, incorporating short-time and harmonic sum spectrums, subharmonic summations, and wavelets to generate data for deep learning models.
- Addressed the scarcity of annotated data for non-western music in vocal ensemble databases by creating a corpus of over 30 annotated vocals, 960 minutes of playback time, from folk ensembles.
- Developed an innovative polyphonic pitch detection algorithm by employing various signal processing techniques such as voiced-unvoiced detection, note estimation, and auto-correlation.

Publications and Awards

- David Gillman, Atalay Kutlay, & Uday Goyat. (2022). Teach Yourself Georgian Folk Songs Dataset: An Annotated Corpus Of Traditional Vocal Polyphony. Proceedings of the 23rd International Society for Music Information Retrieval Conference, 353–360. (https://doi.org/10.5281/zenodo.7316672)
- 3rd Overall and 1st in Technical Computing at Jane Street for MathWorks Math Modeling Challenge 2022

Projects

Generative Art: *p5.js, Processing, OpenProcessing, Nannou, Javascript, C++, Rust*

- Utilized mathematical concepts and computer graphics like randomness, particle systems, procedural texture generation, and color theory to tailor 20+ custom generative NFTs to clients' unique visions.
- Selected generative art showcased on social media at CodifiedDesigns (www.instagram.com/codifieddesigns/)

Performance-Linked Planner App: *MongoDB, ExpressJS, React, NodeJS, Python, Stripe API*

- Built performance-linked planner app using MERN stack and Stripe for incentivized task completion.
- Led end-to-end development, including UI design, payment processing integration, and cloud-based deployment.

Skills

Languages: Python, JavaScript, TypeScript, C++, Java, MATLAB, Rust
Frameworks: React.js, Node.js, Express.js, PyTorch, TensorFlow, scikit-learn, Hugging Face
Developer Tools: Git, Unit Testing, Feature Based Testing, Postman, MongoDB, SQL, Figma, REST APIs, Firebase
Libraries: Flask, Django, OpenCV, Pandas, NumPy, SciPy, Matplotlib, Seaborn, Bootstrap