Utkarsh Singh

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Education

University of Illinois, Urbana Champaign - Honors Program   **Champaign, IL**
B.Sc. Computer Science and Statistics; GPA: 3.94   *Aug 2023 - May 2026 (Expected)*

- *Coursework:* Data Structures and Algorithms, Object Oriented Programming, Numerical Methods, Discrete Structures, Probability and Statistics, Computational Statistics, Real Analysis, Mathematical and Statistical Methods

Technical Skills

- **Languages and Softwares:** C++, Python, SQL, Java, JavaScript, TypeScript, Bash, Excel, Powerpoint
- **Libraries and Frameworks:** NumPy, Pandas, Matplotlib, scikit-learn, Axios, Flask, Django, React, Node.JS, Express.JS
- **DevOps, Databases and Testing:** Docker, AWS, Firebase, MongoDB, MySQL, PostgreSQL, Redis

Experience

Software Engineering Intern   *Sep 2024 - Dec 2024*
Subliva   *Champaign, IL*

- Developed a business platform using **React**, **Express.js**, and **Firebase**, resulting in a **75% increase in users** in 3 months
- Implemented secure real-time communication and geolocation-based filtering features with **WebSockets** and **Google Maps API**, resulted in a **35%** increase in average session duration, leading to a **25% improvement in conversion rates** in 2 months
- Automated legal processes through **DocuSign API**, reducing contract creation time by **50%** and streamlining user workflows

Data Science Intern   *Sep 2024 - Dec 2024*
Pink Unicorn Algorithms   *Remote*

- Developed a ML model to **automate** auditing for cloud configuration compliance, using **MobileNet** and **DistilBERT**, optimizing computational efficiency and reducing review time by **80%** and achieving **90% accuracy** in compliance checks
- Utilized **pre-processing** techniques such as thresholding and grayscaling using **OpenCV** and performed **OCR** using **Tesseract**

Undergraduate Teaching Assistant   *Jan 2024 - Dec 2024*
CS and Physics Dept, University of Illinois   *Champaign, IL*

- Mentored **700+** students in **Java** programming and University Physics, leading to a **15%** increase in average course grades
- Designed 5 mobile app development projects, contributing to a **10%** rise in course completion rates

Software Engineer Intern   *Jul 2024 - Sept 2024*
Headstarter AI   *Remote*

- Optimized API communication with **Axios** and **Redis**, resulting in a **30%** decrease in latency and a **15%** increase in throughput, enhancing backend performance and ensuring secure data handling
- Enhanced user interface with React, leading to a **20%** increase in customer satisfaction scores and a **10%** reduction in conversation abandonment rates

Student Organizations

Software Engineer   *Aug 2024 - Dec 2024*
Project Code   *Champaign, IL*

- Developed a vector-based music recommendation system leveraging the **LastFM** database to retrieve song metadata and recommend based on **cosine similarity**, using **IBM Watson** for relevancy improving recommendation accuracy by **15%**
- Engineered a **KD-Tree algorithm** to optimize nearest-neighbor search, resulting in a song retrieval time of **under 5 seconds**
- Integrated **Spotify's OAuth 2.0** authorization flow, enabling **500+** users to directly like and save songs to their playlists

Web Developer - *sail.cs.illinois.edu*   *Aug 2024 - Present*
Computer Science SAIL   *Champaign, IL*

- Designed and implemented the frontend for the CS SAIL website using **React** and **Material UI**, serving **1000+** users
- Enhanced backend performance and implemented user profiles with **Flask** and **PostgreSQL**, reducing user load times by **30%**
- Established a testing environment with **bash scripts**, improving code reliability and reducing deployment errors by **60%**

Honors and Awards

- Awarded **Dean's List** for maintaining a GPA in the top 20th percentile of the College of LAS, Aug 2023 - Present
- **SAT**: 1510/1600 | Math: 780/800 | Reading and Writing: 730/800, Aug 2022