

Aryan Sharma

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Education


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| University of Michigan , Masters in Data Science 🔗 <ul style="list-style-type: none">Course Highlights: Machine Learning, Large Language Models, Information Retrieval, Database Management Systems, Data Manipulation and Analysis. | 08/2023 – present
Ann Arbor, US |
| PES University , Bachelor of Technology in Computer Science and Engineering 🔗 <ul style="list-style-type: none">GPA: 3.53/4.0Course Highlights: Machine Learning, Statistics for Data Science, Cloud Computing, Big Data, Data Analytics.Awards/Honors: Prof. M R Doreswamy Merit Scholarship for excellent academic performance. | 08/2019 – 06/2023
Bengaluru, IN |

Professional Experience


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| Amazon , Software Development Engineer Intern 🔗 <ul style="list-style-type: none">Implemented a distributed locking mechanism leveraging AmazonDynamoDB to prevent concurrent AWS Batch Scheduler assignments to customers' namespaces; this solution explicitly prevented complete blockage of job queues and ensured accurate calculation of vCPUs, significantly minimizing scheduling errors during grey failure scenarios.Developed detailed operational monitoring metrics with AWS CloudWatch, providing engineering teams actionable, stage-level insights during Manager bootstrap within AWS Batch Scheduler, directly enabling faster troubleshooting and increased reliability. | 05/2024 – 08/2024
Seattle, US |
| University of Michigan , Graduate Student Instructor - Statistics 250 - Introduction to Statistics and Data Analysis 🔗 <ul style="list-style-type: none">Designed and facilitated interactive weekly discussions focusing on fundamental concepts (hypothesis testing, regression analysis, visualization in R), systematically measuring improvement through quiz and exam performance and achieving a 20% increase in student comprehension.Created, administered, and quantitatively graded lab assessments incorporating real-world datasets in R and Python; actionable personalized feedback significantly enhanced students' concept understanding and resulted in apparent improvement in overall lab assignment performance. | 01/2024 – 05/2024
Ann Arbor, US |
| Genpact , Data Scientist 🔗 <ul style="list-style-type: none">Built interactive dashboards using Tableau and developed customer segmentation models in Python (Scikit-learn, Pandas) to identify churn drivers, enabling targeted customer strategies resulting in 30% lower churn and 25% higher average order value. | 02/2023 – 08/2023
Bengaluru, IN |
| PES University , Teaching Assistant - Statistics for Data Science 🔗 <ul style="list-style-type: none">Designed interactive practical sessions (Python Pandas, NumPy, R) utilizing real-world datasets to teach data manipulation, exploratory analysis, and inference. Validated session effectiveness by quantifying increases in student participation (25%) and measurable improvement in exam performance (15%), clearly demonstrating enhanced grasp of applied data science concepts. | 06/2022 – 11/2022
Bengaluru, IN |
| Smarthub.ai , Data Analyst 🔗 <ul style="list-style-type: none">Developed a Linear Regression model (Python: Scikit learn, Pandas) to identify optimal positioning angles for robotic arms used in automated vehicle paint application used at TVS Motors. Validated model predictions through controlled comparative experiments against existing fixed-angle processes, clearly demonstrating a measurable 98% reduction in paint wastage and significantly decreasing operational cost and environmental impact. | 06/2022 – 10/2022
Bengaluru, IN |

- Extracted and analyzed large-scale user operational logs from MongoDB using PyMongo, creating a process similarity matrix to uncover frequently repeated or redundant user tasks. Delivered actionable insights enabling workflow streamlining, directly reducing operational redundancies by 30% and improving overall team productivity by 20%.

Publications

RtTSLC: A Framework for Real-Time Two-Handed Sign Language Translation, 2023
Springer, DOI: https://link.springer.com/chapter/10.1007/978-981-99-0769-4_62 

- Developed a novel deep learning-based framework (CNN, Siamese Networks) for accurate, real-time translation of two-handed Indian Sign Language. Conducted systematic experiments evaluating model accuracy and latency metrics, documented in detail in **Springer** proceedings; presented findings at the **International Conference on Smart Trends in Computing and Communications**.

Sign Language Translation Systems: A Systematic Literature Review, 2022
IGI-global, DOI: <https://www.igi-global.com/gateway/article/311448> 

- Conducted a systematic analytical review synthesizing insights and knowledge from over 200 peer-reviewed papers on Sign Language Interpretation technologies, summarizing prevailing methodological trends, research gaps and clearly defined opportunities; publication in **IGI Global** provided an impactful basis for guiding future research.

Cardiac anomaly detection models for wearable devices, 2021
Student Research Symposium (SRS)

- Designed and validated a deep-learning based architecture (TensorFlow-Keras) for detecting and classifying cardiac anomalies using wearable-collected 2-lead ECG signals, demonstrating 98% predictive accuracy. Presented detailed analytical methodology and evaluation results at the **13th HiPC Student Research Symposium (SRS), part of the 28th IEEE International Conference** on High-Performance Computing, Data, & Analytics.

Projects

RealSign: Real-Time Instantaneous Bi-Directional Sign Language Interpretation, 02/2022 – 06/2023
Capstone Project

- Engineered and deployed a practical bi-directional speech/text-to-Indian Sign Language translation application using advanced computer vision and deep learning (TensorFlow, Keras, OpenCV), translating real time user gestures into readable speech/text and vice versa.
- Conducted live user validation and demonstrated significant accessibility improvement for the hearing impaired community, leading to positive feedback from stakeholders and recognition in an international research publication (**Springer**).

ECG Classification, CHIPS (Centre for Heterogeneous and Intelligent Processing Systems) 08/2021 – 12/2021

- Designed, trained, and rigorously evaluated a deep learning-based predictive model in Python (TensorFlow Keras) to classify cardiac conditions from wearable sourced 2-lead ECG data, achieving a high classification accuracy of 98%, thus enabling precisely informed wearable-device-based cardiac monitoring decisions.

Skills

Machine Learning: TensorFlow, Keras, PyTorch, NumPy, Pandas, **Data Engineering Tools:** Apache Spark, Airflow, AWS data services, **SQL/NoSQL:** MySQL, MongoDB, CosmosDB, Cassandra, PyMongo, **Programming:** Python, R, C/C++, C#, Java, Perl, JavaScript, Kotlin, Go, Typescript, KornShell, SAS, Stata, MATLAB, Unix/Linux, **Cloud Technologies:** AWS, GCP, Azure, **Data Visualisation/Business Insights:** Power BI, Tableau, AWS QuickSight, **Front-End, Full Stack, Web Development Stack:** HTML, CSS, Javascript, React, Vue, Angular, **Big Data:** Hadoop, Apache Spark, Kafka, Kinesis, **Test Automation Frameworks:** Junit, TestNG, Selenium