

Manan Agrawal

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Seeking a software developer position to build scalable applications using my experience in cloud automation and backend services.

Education

7.71/10 **BITS Pilani | Pilani, India**, M.Sc. Economics and B.E. Electrical & Electronics *Aug 2019 - Jul 2024*

- **Achievements:** Got Merit-Cum-Need Scholarship (Top 10% of students)
- **Courses:** Probability and Statistics | Computer Programming | Object Oriented Programming | Operating Systems

Experience

Nielsen, Member of Technical Staff 1 | Gurgaon *Jul 2024 - Present*

- Spearheaded the architecture of the enterprise **SEI Self-Service Portal** using **Next.js** and **AWS Serverless**, enabling secure ingestion of **500MB+** datasets while achieving **99.9%** system availability.
- Engineered a real-time validation engine using **AJV** and **TypeScript** that enforces strict schema compliance, reducing downstream data errors by **85%** and manual processing overhead by **80%**.
- Slashed **AWS operational costs** by **80%** through deep-dive resource optimization and infrastructure streamlining.
- Automated **90%** of AWS deployments with **Terraform** and **Gitlab CI/CD**, leading to faster, more reliable, and scalable releases.
- **Re-architected** a core client onboarding service built on **Python** and **Kubernetes**, transforming it into a highly flexible, configuration-driven model, streamlining the end-to-end onboarding process by **70%**.

Amazon Development Centre, Software Development Engineer Intern | Gurgaon *Jul 2023 - Dec 2023*

- Boosted **response time by 30%** by integrating **AWS CloudWatch** enabling Anomaly Detection alarms during deployment
- Created an **AWS Lambda** exception handler, improving error management by routing message to **SQS** DLQs based on exception type
- Increased **test coverage from 33% to 91%** by creating over 50 **Mockito unit tests** for a **Spring-based service**.

MCME Secunderabad, Research Intern | Remote *May 2021 - July 2021*

- Fine-tuned **Mozilla DeepSpeech** and **LSTM** models for Chinese-to-Hindi transcription and translation, achieving a **0.32 BLEU score**.
- Deployed the models end-to-end by integrating them with a **Python-based GUI** and **IoT devices** to enable real-time usage.

iLRNU Inc., Fullstack Developer Intern | Remote *Sep 2020 - Dec 2020*

- Collaborated with the team on the 2.0 update of the **React.js website**, revamping the design and introducing new functionalities.
- Enhanced the **user-friendliness** of the main website, leading to a **20% surge in daily user count**.
- Conducted a seamless migration of the existing **Node.js-written MySQL database to MongoDB collections**.

Skills

Programming	Python, C/C++, Java, JavaScript, TypeScript, Scala
Cloud & DevOps	AWS (Lambda, Cognito, DynamoDB, API Gateway), Terraform, Docker, Kubernetes, GitLab CI/CD
Frameworks	React.js, Next.js, Node.js, Tailwind CSS, Spring Boot, Spark, PostgreSQL, MongoDB, Tensorflow, PyTorch
Core CS Concepts	Data Structures & Algorithms (300+ problems solved), Object-Oriented Programming, Operating Systems
Certifications	Deep Learning Specialization, DeepLearning.AI – (2021) Machine Learning, Stanford Online – (2021)

Projects

Understanding Impact of Managerial tone of Firm Value *Aug 2022 - Jul 2023*

Supervisor: Dr. Byomakesh Debata

- Analyzed annual reports from over **500 NSE-listed companies** using text-to-numerical analytics
- Attained a **91%** accuracy in utilizing a fine-tuned **finBERT** model to discern the correlation between managerial tone and Firm Value

Hostel Allocation Portal *May 2022 - Jul 2022*

Only official sub-domain of BITS Pilani to be entirely managed by students

- Engineered a Dockerized system (Vue, Node, PostgreSQL) utilizing **Google OR-Tools** to optimize allocation for **5,000+ students**.
- Reduced allocation process from **20 days to <5 minutes**, saving **10,000+ man-hours** across 15+ hostels.

Enhancing UAV-Captured Pavement Imagery in Poor Visibility *Jan 2022 - April 2022*

Supervisor: Dr. Pratik Narang

- Created a cutting-edge deep learning pipeline for pavement health monitoring, overcoming limitations in low-visibility conditions
- Attained **93.34%** accuracy with an inference time of **0.154 sec.**, offering efficient solutions for road health monitoring tasks

Position Of Responsibility

Department of Visual Media, BOSM Coordinator *Aug 2021 - Jul 2022*

- Led a 35-member technical team to architect the BPL 2022 website using **React** and **Django**, implementing secure payment gateways to process **1,500+** team registrations for a festival exceeding **100,000** footfall.

NSS BITS Pilani, Coordinator *May 2021 - May 2022*

- Spearheaded a cross-functional team of 6 to develop the official organization website using **React.js** and orchestrated the chapter's first online educational initiative for students in grades 6–10.