Prafull Kumar Prajapati

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EDUCATION

University of Texas, Dallas (UTD) | M.S. in Computer Science | Richardson, TX   May'26
   Coursework: Database Design, Operating System, Object-Oriented Programming, Machine Learning, Software Development   **GPA**: 4.0/4.0
   Scholarship: Dean's Scholarship for Outstanding Academic Achievement
Indian Institute of Technology, Kharagpur (IIT) | B.Tech in Aerospace Engineering | Kharagpur, India   Jun'21
   Coursework: Data structures and algorithms, Probability and Statistics, Computer Organization and Architecture   **GPA**: 3.3/4.0

TECHNICAL SKILLS

- **Programming Languages:** C/C++, JavaScript, Java, Python, PostgreSQL, TypeScript, MySQL, SQL, C#, .NET, Rust, Assembly
- **Software Tools/ OS:** PowerBI, Visual Studio, Azure DevOps, Excel, PgAdmin, Google Analytics, WordPress, Redis, Docker, Linux, Git
- **Libraries/Frameworks:** Node.js, ServiceNow, ExpressJS, Angular, Sequelize, AWS services, Pandas, Google Cloud, scikit-learn, Azure

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PROFESSIONAL EXPERIENCE

Software Dev Engineer Intern, Amazon Web Services (AWS), Seattle, United States   May'25 - Aug'25
- Integrated **long polling** in **Java** based microservices to get the latest log from **DynamoDB** database to reduce redundant requests and cost.
- Evaluated multiple long polling design approaches, filtered them based on requirements related to **scalability**, future growth, and timeframe.
- Optimized long polling by adding a configurable timeout and reducing concurrent blocked threads by **asynchronous request-reply pattern**
- **Achieved 84%** reduction in total requests, which significantly results in lowering CPU, memory, file descriptor usage, and network I/O.

Backend Team Lead, LivSYT, Hyderabad, India   Jun'21 - Jul'24
- Created a strategy to migrate **AWS** to **Azure** Services and also managed **CI/CD pipelines** for numerous services using **Azure DevOps**.
- Designed architectures while considering Azure costs, recommended suitable database infrastructure, and achieved a **25%** cost reduction.
- Identified the **REST APIs** that require microservices and implement them in **TypeScript** to optimize AWS Lambda cold start time by **30%**.
- Efficiently used **Sequelize** with **NodeJS** and deployed **microservices** using the Serverless Application Model (**SAM**) on **AWS Lambda**.

Software Developer, Arth, Hyderabad, India   Jan'21 - May'21
- Built an API Gateway to securely pass user parameters and trigger the lambda function for sending emails by Simple Email Service(**SES**).
- Created a robust mechanism to locate rejected mails and resend them by Simple Queue Service(**SQS**), reducing rejected mails by **60%**.
- Implemented scalable **unit test** infrastructure using **in-memory** database integration in **Loopback** framework for REST backend API testing
- Designed and implemented **.NET** applications on Azure cloud, leveraging microservices and containerization to achieve **99.9%** uptime

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RESEARCH PUBLICATIONS

- 'Improving Algebraic Expression Generation using Crow Search-based Genetic Algorithm' presented at the 20th Applied Computing
  Conference.   2023

PROJECTS

Strategies to Optimize Project Management, University of Illinois, Chicago   Oct'23 - Feb'24
- Evaluated multiple **Metaheuristic** algorithms and identified the one that maximized NPV/profit while optimizing project timelines.
- Designed a feature that takes into account resource limits and activity precedence, ultimately culminating in a prescribed activity pattern.

NLP-based Video Recommendation Software, IIT Kharagpur, India   Aug'20 - Dec'20
- Developed a model in **python** using Naive Bayes classifiers to accurately categorize video content into educational and non-educational.
- Implemented intelligent recommendation system with **Natural Language Processing** by extracting keywords from video using Pytesseract.

Physical Rehab, Open IIT Product design, Silver Medal, IIT Kharagpur, India   Aug'18 - Oct'18
- Devised an innovative algorithm to build a digital health platform for asset physical rehabilitation that is both Agile and highly efficient.
- Effectively established motion for **16** human joints using the **OpenPose** model from 2-D spatial coordinates and depth detail from **Kinect**.
- Applied the Kalman filter and meticulously created an **80%** accurate regression model to accurately identify human figure in 2-D data point.
- Integrated the animation of a 3D Human Model with the real-time human in Javascript using the advanced **Three.js** library seamlessly

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LEADERSHIP EXPERIENCE

Teaching Assistant, The University of Texas at Dallas, United States   Aug'24 - Current
- Mentored and assisted students with Java and software engineering courses through continuous evaluation and feedback for improvement

Backend Team Lead, LivSYT, Hyderabad, India   Jun'23 - Jul'24
- Managed a team of **4**, overseeing database design, API development, and ensuring seamless communication between team members.
- Secured a key client, **DRA Infracon**, by delivering critical **WhatsApp APIs** within a day, meeting project expectations and timelines.

Secretary Cricket, Indian Institute of Technology, Kharagpur   Jul'18 - Mar'19
- Managed budget of **$80K** to procure gear, improving practice, and led the team to win bronze medal in the Inter-Hall Cricket championship.

AWARDS AND ACHIEVEMENTS

- Ranked in the top **1%** of candidates for the International bimonthly competitive programming challenge held by Leetcode.   2022
- Placed in the top **3%** of applicants for JEE (Joint Entrance Examination Advanced) and the top **0.6%** for JEE Mains.   2017