

Mahek Sota

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Education

- **University of Southern California** Los Angeles, CA
 - *Master of Science in Computer Science*
 - Analysis of Algorithms, Database Systems, Foundation of Artificial Intelligence, Web Tech, Applied NLP
- **Thadomal Shahani Engineering College (Affiliated with Mumbai University)** Mumbai, India
 - *Bachelor of Technology in Computer Science*
 - Data Structures, Computer Networks, Operating Systems, Cloud Computing, Distributed Storage, Artificial Intelligence, Machine Learning, Object-Oriented Programming (OOP) and design patterns, Data Science.

Technical Skills

Lang: C++, C#, Python, Java, JavaScript (ES6+), SQL, PHP, TypeScript, Golang, Kotlin, Shell, Ruby, R, bash
Frontend: React(Redux & Hooks), AngularJS, HTML5, CSS, Vue.js, Next.js, Tailwind CSS, React Native, Ajax, jQuery
Backend: NodeJS, ExpressJS, Flask, Django, Spring, Spring Boot, Hadoop, Spark, GraphQL, Yarn, SOAP, JSON, REST, XML, Redis, Kafka, HBase | **Databases:** DynamoDB, PostgreSQL, MongoDB, MySQL, Redis, Neo4j, PL/SQL
Others: Amazon Web Services (AWS), IBM Cloud, Google Cloud (GCP), Git, JSON, Kubernetes, Azure, SCRUM, CI/CD, JIRA, Docker, NGINX, Linux, Maven, UNIX, Agile, Selenium, MATLAB, SDLC, Swift, Android Studio, Ansible

Experience

- **University of Mississippi, Software Developer** Jun 2024 - Present
 - Deployed four high-performance full-stack applications using **PHP, React, Django, and Flask**, serving **100+ faculty and 10,000+ students**. Ensured **scalability and modularity** through **Agile-driven** iterations.
 - Optimized scalable **data engineering pipelines**, transforming functional requirements into **UML sequence diagrams**, normalized **database schemas**, and modular **object-oriented** solutions. Applied ETL frameworks, Python scripting, and data visualization tools to extract actionable insights for research enablement.
 - Refactored and containerized monolithic architectures into **Dockerized microservices**, optimizing application performance to **double processing speed** and reducing resource costs by **25%**. Integrated **Kubernetes for automated scaling**, ensuring high availability and fault tolerance.
 - **Developed** an NLP classification model leveraging **BiLSTM** for sequence-based predictions. Constructed a data collection pipeline, preprocessing framework, and end-to-end prediction system. Utilized Word2Vec embeddings, **PyTorch-based sequence-to-sequence architecture**, and performance tuning to achieve **90% accuracy**.
 - *Word2VecTech Stack: Word2Vec, Word2VecReact, Flask, Django, PHP, Kubernetes, Docker, Airflow, PostgreSQL, Redis, FastAPI, PyTorch, BiLSTM, Terraform, CI/CD (GitHub Actions, Jenkins), Word2Vec, NGINXAn.*
- **Friends for Inclusion, Machine Learning Intern** Dec 2021 - Jan 2022
 - Developed an AI-powered audiobook conversion tool for blind users, utilizing a **Long Short-Term Memory** sequence-to-sequence neural network model for language translation. Implemented **Word2Vec** embeddings.
 - Optimized translation accuracy by **80%**, reducing model perplexity through **beam search decoding, attention mechanisms**, gradient clipping, and dropout regularization. Fine-tuned hyperparameters using Adam optimization.
 - *Tech Stack: PyTorch, LSTM, Word2Vec, Hugging Face Transformers.*
- **Ashtech, Web Development Intern** Jun 2021 - Aug 2021
 - Revamped **UI/UX and enhanced accessibility**, implementing mobile-first responsive design, boosting user satisfaction by **20%**. Conducted **A/B testing**, usability studies, and ensured **WCAG 2.1** compliance.
 - Developed and optimized full-stack payment features, integrating **PayPal APIs** for enhanced security and real-time error handling. Reduced load times by **40%** through modular React components, caching and API optimizations.
 - *Tech Stack: React.js, TypeScript, Redux, Node.js, Express.js, REST APIs, PostgreSQL, PayPal/Stripe APIs, Jest, Cypress, UX Research.*

Projects

- **Huffman-Based Lossless File Compression**
Tech Stack: C++, STL, File I/O, Bit Manipulation, Huffman Encoding, Data Structures, Trie, Multithreading, CLI
- **DevOps Dashboard for CI/CD Monitoring**
Tech Stack: Spring Boot, Gradle, PostgreSQL, React, GitHub Actions API, Jenkins API, WebSockets, Recharts, Docker, Kubernetes, Redis
- **Social Media Analytics Dashboard (Full-Stack)**
Tech Stack: Django, Flask, React, PostgreSQL, Celery, Redis, GraphQL, Docker, Kubernetes, WebSockets, TensorFlow
- **AI Chatbot for Smart Recommendations**
Tech Stack: FastAPI, TensorFlow, NLP, LangChain, OpenAI API, PyTorch, gRPC, Kubernetes, Ansible, Neo4j