Ketul Kishorbhai Chhaya

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Education

University of Maryland, Baltimore County Aug 2024 - Present
Master of Science in Computer Science, GPA: 4.0 *Baltimore, MD*
Relevant Coursework: Design and Analysis of Algorithms, Machine Learning, Cloud Computing, Software Testing, Data Visualization

Pandit Deendayal Energy University Aug 2019 - Jan 2023
Bachelor of Technology in Information and Communication Technology, GPA: 4.0 *Gandhinagar, GJ*
Relevant Coursework: Data Structures and Algorithms, Operating Systems, Computer Networks, Embedded Systems, Big Data

Skills

Languages and Databases: JavaScript, Typescript, Python, Java, C++, HTML5, CSS3, MongoDB, MySQL, Firebase
Frameworks & Libraries: Next.js, React.js, Node.js, Express.js, Numpy, Pandas, Scikit-Learn, OpenCV, Material-UI, Tailwind CSS
Tools & Platforms: GitHub, Postman, VS Code, PyCharm, Eclipse, Docker, Vercel, Kafka, AWS, Linux, ServiceNow, Figma
Practices & Methodologies: Object-Oriented Programming (OOP), Systems Programming, Low-Latency Design, Agile/SCRUM, SDLC, CI/CD (GitHub Actions), SEO (Core Web Vitals, CMS, Accessibility), Distributed Systems
Security & Testing: JWT, OAuth, Web Security Best Practices, Shell Scripting, JUnit, Jest
Data Science & ML: Data Preprocessing, Data Visualization, Data-Driven Modeling, Machine Learning
UI/UX & Web Technologies: UI/UX Design, RESTful APIs, Web API, OPENAI API, Chat Engine, Docusign Integration

Experience

Software Engineer Intern May. 2025 - Present
BizChat *Baltimore, MD*
- Built a scalable analytics logger, tracking user-AI chat events and navigation flow across BizChat's interface; utilized efficient data structures to stream structured logs, powering timeline-based usage insights and behavioral analysis.
- Led the development of authentication flows and dynamic survey workflows, enabling structured onboarding and automated feedback collection across the platform.
- Implemented a cost monitoring system that parses and aggregates input/output token metrics from AI API calls, using hash-based accumulators and streaming reducers to compute usage costs per session, user, and business plan in real-time.

Software Engineer Jan. 2023 - Aug. 2024
Aavenir *Ahmedabad, GJ*
- Architected and optimized a C++ based metadata extractor on Linux, processing 8,000+ legacy contracts (30% faster than Python prototype).
- Optimized workflows by implementing dynamic parallel and sequential processes, reducing contract approval time by 50% and enhancing global product adoption with multi-language support.
- Implemented a real-time user review feature for Word Add-In, enabling seamless status synchronization via inbound actions.
- Developed a ServiceNow API-based automation portal to streamline contract model configuration, aggregating fields, scripts, and rules, reducing setup time from 8 hours to 2 hours, boosting efficiency by 75%.

Full Stack Developer Nov. 2022 - Jun. 2023
ClosestCloset *Chicago, IL (Remote)*
- Built the adaptive frontend of an e-commerce platform with React.js, increasing revenue by 30%. Implemented JWT authentication with secure token storage and role-based access control.
- Implemented a unique hanger credit system, enabling users to earn and redeem credits through donations and item listings, leading to a 50% increase in user engagement and repeat transactions along with referral and promo code for user growth.
- Integrated real-time WebSocket messaging and advanced search filtering, improving user interactions and product discoverability, contributing to a 30% growth in active users.
- Optimized performance, SEO, and accessibility, improving page load speed by 40%, enhancing discoverability, and boosting organic traffic.

Projects

Multi-Threaded Pollard's Factoring Algorithms | *C++, GMP, Python* github.com/KetulChhaya
- Architected and implemented a high-throughput parallel computing framework in C++ and GMP to execute advanced integer factorization algorithms (Pollard's rho, p-1), successfully factoring RSA moduli up to 140 bits and demonstrating a practical capability to identify and exploit cryptographic weaknesses.

Fault Analysis for Wind Turbines | *Scikit-Learn, Machine Learning, Python* bit.ly/3XZ67Zl
- Conducted data preprocessing and applied advanced machine learning techniques - Random Forest, One-Class SVM, and XGBoost - for classification and predictive analysis, focusing on detecting and diagnosing turbine faults.