PRANJAL SRIVASTAVA

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SUMMARY

Software engineer with advanced experience in backend, full-stack, AI/ML, and data-driven projects. Specialized in building and optimizing university-scale ERP modules using Java/Spring Boot and .NET, focusing on high performance and data accuracy for student, academic, and finance systems. Delivered practical solutions such as ServiceNow apps, local analytics tools, and AI-powered assistants, demonstrating end-to-end project ownership and strong engineering practices. Aiming to apply expertise in backend and AI integration to develop reliable, real-world solutions that meet user needs.

CORE SKILLS

- **Languages & Frameworks**: Java, Spring Boot, C#, .NET, Python, TypeScript/JavaScript, React, HTML5, CSS3, SQL
- **Backend & APIs**: RESTful API design, JSON contracts, authentication and RBAC, input validation, pagination, background jobs, error handling and retries, Swagger/OpenAPI, webhooks
- **Frontend & UX**: React components and hooks, form handling and validation, responsive layouts, accessibility minded UI (semantic HTML, ARIA, keyboard navigation), ServiceNow Service Portal widgets
- **Databases & Data**: Relational modeling and normalization, primary/foreign keys, joins and indexing, query tuning, MySQL/PostgreSQL, DuckDB, basic reporting and analytics oriented views
- **AI, ML & LLMs**: Supervised learning, feature engineering, classical ML classification, basic deep learning, ECG signal and network traffic modelling, retrieval augmented generation, embeddings, vector search, cosine similarity, chunking strategies, grounding with citations, hallucination checking, prompt design, WebLLM and Transformers.js
- **Data Engineering & Pipelines**: ETL/ELT style workflows, ingesting CSV/PDF/text data, cleaning and transformation, scheduling via cron/GitHub Actions, logging parameters and outputs for reproducibility
- **Cloud, DevOps & Tooling**: Git, GitHub, GitHub Actions CI/CD, Docker, Vercel serverless functions, GitHub Pages, simple environment promotion flows (dev/staging/production), basic monitoring and logging
- **Platforms & Process**: ServiceNow platform (tables, business rules, Service Catalog, Service Portal), Jira, Agile/Scrum, code reviews, writing runbooks, API docs, user facing documentation, collaborating with product, ops, and non technical stakeholders

EXPERIENCE

Tinker Tech Logix **Apr 2024 - Nov 2025**

Software Developer

- Designed and evolved core university ERP modules (Admissions, Fees, Attendance, Exams, Results) in Java/Spring Boot and relational databases, replacing spreadsheet based workflows with centralized services and consistent schemas.
- Modeled entities such as Students, Programs, Courses, Batches, Fees, and Results with clear relationships and constraints so data stayed consistent across modules and reports.
- Improved p95 latency on high traffic student and admin endpoints by about 30% through indexed queries, tuned ORM mappings, and caching hot reads, keeping key APIs responsive during peak exam and fee payment periods.
- Defined RESTful APIs with clear JSON contracts and Swagger/OpenAPI docs so portals, mobile apps, and downstream systems could integrate reliably with student, academic, and finance data.
- Implemented CBCS (Choice Based Credit System) rules to automate credit, SGPA, and CGPA calculations and result publishing, cutting result processing turnaround time by an estimated 25-30% and reducing manual corrections for academic staff.
- Integrated payment gateways (Razorpay, Paytm) with GST compliant invoicing, callback handling, and ledger reconciliation logic, reducing manual reconciliation effort and giving finance teams more consistent data for analysis.
- Enhanced security and governance by implementing role-based access control, permission checks in service layers, audit logging for sensitive operations, and improved authentication flows, reducing access related support tickets and improving traceability during incidents
- Collaborated with frontend developers to align API contracts, validation rules, and error messages with UI behavior, ensuring student and admin-facing screens behaved predictably and provided useful feedback, leading to an improved user experience
- Expanded automated tests (unit and integration) for critical flows such as admissions, fee payment, and results publishing, and integrated these into GitHub Actions CI pipelines to catch regressions earlier in development
- Contributed to internal documentation and runbooks that explained key modules, API endpoints, and operational procedures, lowering onboarding time for new developers and making on call support easier.

ECS **May 2019 - Aug 2019**

Intern, Cloud Server & Data Management

- Assisted in planning and testing migration of on prem workloads to cloud hosted servers, including capacity checks and basic monitoring for shared environments.
- Helped script and document backup and recovery procedures for critical data and services, reducing manual recovery time by roughly 20% and standardizing runbooks for common incident scenarios.
- Supported data management tasks such as validating data consistency after migration, improving folder and permission structures, and documenting data handling practices for internal teams.

PROJECTS

Ops Copilot for IT/Support - Al Ops Assistant

- Designed an Al copilot that ingests tickets, runbooks, and logs to help IT/support teams triage incidents, surface known fixes, and draft responses aligned with internal procedures.
- Implemented retrieval augmented generation over internal documentation with guardrails and tool like prompts, and exposed this behind clean APIs that frontends can call for suggestions and summaries.

Private Doc Chat - Browser Only RAG for PDFs

- Built a browser based RAG application that ingests PDFs, chunks and embeds them using Transformers.js (e.g., MiniLM), and stores embeddings and metadata in IndexedDB for reuse across sessions.
- Uses cosine Top k retrieval and WebLLM for on device question answering with citations, and provides Ul to inspect retrieved passages and tune retrieval parameters for quality.

Hallucination Guard - Client Side LLM Hallucination Checker

- Created a client side pipeline that embeds user PDFs/text, indexes them, and then verifies each claim in an LLM answer against retrieved passages to flag unsupported statements.
- Implements a review 'sources 'report flow that labels statements as supported, unsupported, or uncertain, and generates grounded rewrites to reduce hallucinations before answers are shared with end users.

Local CSV Analyst - Local First Data Explorer with Al Assist

- Developed a local first CSV analytics tool that uses DuckDB (WASM) in the browser to run SQL queries, aggregations, and charts without sending data to a server, keeping sensitive datasets on the user's machine.
- Implemented typed filters, reusable query presets, and a chart builder Ul so non technical users can explore datasets quickly; added Al generated summaries and anomaly notes while keeping a deterministic SQL layer underneath.

Vanessa - Voice Al Acquisitions Agent (Vapi + Node)

- Built a voice Al assistant that calls homeowners, gathers seller intent and property details within a couple of minutes, and logs qualified leads to a live browser based dashboard.
- Used Vapi for the voice/LLM layer and a Node.js/Express backend for webhooks, lead storage, and REST APIs, with deterministic qualification rules and outcomes to keep results auditable.

MAX-AI Assistant - On Site Portfolio Chatbot

- Integrated a custom Al assistant into a personal portfolio site so visitors can ask about projects, skills, and experience, backed by a Vercel serverless API and Groq hosted models.
- Designed concise system prompts, CORS safe endpoints, and a resilient frontend chat experience with streaming responses, optimistic UI, and basic error handling and fallbacks.

Lumina - Agentic Web Assistant (Chrome Extension, WIP)

- Experimented with a Chrome extension that uses an LLM to understand pages, follow links, and perform agent like browsing tasks within a constrained, user visible flow.
- Focused on defining safe action sets, managing context windows, and providing clear explanations of what the assistant is doing rather than opaque automation.

Dog Adoption Portal App - ServiceNow

- Designed and implemented a Dog Adoption Portal using ServiceNow with catalog items and a Service Portal for browsing dogs, submitting adoption requests, and tracking status.
- Defined custom tables and relationships for Dogs, Adoption Centers, and Requests, and added Ul policies, client scripts, and email notifications to keep data clean and applicants informed.

Helpdesk Ticketing App - ServiceNow

- Developed a Helpdesk Ticketing application using ServiceNow with custom tables for tickets, departments, and technicians, plus relationships for routing and reporting.
- Configured auto assignment logic, SLAs, email notifications, and dashboards so users can submit, track, and resolve IT issues from a single place with clear status visibility.

Personal Portfolio Site - Static HTML/CSS/JS

- Built a responsive personal portfolio site with a sticky header, dark/light mode toggle, and a projects gallery with tag filters and full text search to help recruiters find relevant work quickly.
- Optimized for performance, accessibility, and SEO using Core Web Vitals guidance, preloaded hero content, explicit image sizing, lazy loaded images, clear focus states, and structured metadata.

Heart Failure Detection Using ECG Signals

- Developed a machine learning pipeline for ECG based heart failure detection, including signal preprocessing, segmentation, feature extraction, and classification using a neural network.
- Evaluated performance across multiple heartbeat classes, examined confusion matrices, and tuned thresholds to balance sensitivity and specificity for potential clinical use.

Detection of DDoS Attacks on SDN Networks Using Machine Learning

- Built an SDN testbed using Mininet and a RYU controller to generate normal and DDoS traffic, capturing and labeling flow statistics as a dataset for modelling.
- Engineered traffic features and trained ML models to distinguish normal vs attack flows, evaluating on held out data and triggering alerts back to the controller when DDoS patterns were detected.

Fake News Detection Using Python
- Implemented a text classification pipeline to distinguish between real and fake news articles using Python, scikit learn, and traditional ML algorithms.
- Handled data cleaning, tokenisation, vectorisation, model training, and evaluation, and compared multiple models to choose the best performing classifier.

Predictive Weather Forecasting Using Deep Learning
- Explored deep learning approaches for weather forecasting using historical time series data, including feature preparation and sequence modelling.
- Trained and evaluated models on past weather observations to predict future conditions, and compared model outputs with baseline methods.

EDUCATION

Texas A&M; University-Corpus Christi **Jan 2022 - Dec 2023**
M.S., Computer Science

SRM Institute of Science & Technology **Jul 2017 - May 2021**
B.Tech., Computer Science

CERTIFICATIONS

- **micro1 Certified Software Engineer (Al Interview):**Sep 2025
- **Programming in Python for Everyone (Coursera)**
- **Learn C++ Programming - Beginner to Advance Deep Dive in C++**
- **Complete ServiceNow Developer Course (Udemy)**
- **ChatGPT Prompt Engineering for Developers**
- **Building Real Time Video Al Applications (Nvidia)**

EXTRA CURRICULAR

International Student Organization (ISO)
Scheduler
- Planned and maintained the ISO master calendar; handled room bookings, vendors, and university approvals for cultural and social events.
- Coordinated end to end event logistics (venue, AV, catering, permits), created run of show plans, and led student volunteers for smooth execution.