

# Rohan Sawai

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## EDUCATION

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- **Virginia Tech** Blacksburg, VA  
*Master of Science in Computer Engineering: GPA: 3.90/4.00* Jan. 2025 – Dec. 2026 (expected)  
Coursework: Advanced Machine Learning, Applications of Machine Learning, Compiler Optimizations
- **Veermata Jijabai Technological Institute (VJTI)** Mumbai, India  
*Bachelor of Technology in Electronics and Telecommunications* Aug. 2019 – Jun. 2023

## EXPERIENCE

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- **Center for Geospatial Information Technology , Virginia Tech** Blacksburg, VA  
*Software Developer* Feb. 2025 – Present
  - **Geospatial Web Applications:** Engineered scalable, high-performance **Django** and **GeoDjango** applications for **real-time mapping and spatial analytics**, leveraging PostGIS and RESTful APIs to serve interactive map layers.
  - **Cloud-Native Deployment:** Containerized microservices using Docker & Kubernetes; implemented CI/CD pipelines on GitLab CI for automated testing, build, and deployment to AWS EC2—ensuring zero-downtime releases.
  - **Spatial Data Processing:** Optimized geospatial data ingestion workflows with asynchronous task queues (**Celery** + **Redis**), reduced ETL latency by 40%, and integrated **Leaflet.js** for heatmaps cluster visualization.
- **Citi Bank** Pune, India  
*Software Engineer* July 2023 – Jan. 2025
  - **End-to-End Product Delivery:** Collaborated closely with business stakeholders to gather requirements, translate them into technical specifications, and deliver end-to-end features—from design through production—incorporating iterative feedback loops to boost adoption by 20%.
  - **Full-Stack Feature Delivery:** Led end-to-end development of dynamic, responsive dashboards using React.js, Redux Toolkit, and TypeScript; employed Agile sprints to iterate on user stories and deliver incremental value.
  - **Performance Optimization:** Refactored legacy code, implemented code-splitting lazy loading, optimized Webpack bundles—achieving a 30% page-load improvement and 25% reduction in resource usage.
  - **Security & Compliance:** Enforced enterprise-grade security via JWT authentication, performed static analysis with SonarQube, and resolved 96% of high-severity Black Duck vulnerabilities during React 11 → React 18 migration.
  - **Data Visualization & Analytics:** Built complex charts in D3.js and Chart.js; integrated real-time WebSocket streams for live financial metrics, and pushed metrics into Prometheus & Grafana dashboards.
- **InterAct Software** Mumbai, India  
*Software Engineer Intern* Jun. 2022 – Aug. 2022
  - **REST API Development:** Implemented RESTful endpoints in Django, supporting modular service interactions.
  - **User Feedback Integration:** Partnered with product managers to triage 30+ user feedback items—resulting in a 5% decrease in bounce rate and improved UX.

## PROJECTS

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- **Propaganda Detection using BERT:**
  - **Model Fine-Tuning & Accuracy:** Fine-tuned a pretrained BERT model on 40k+ tweets, Reddit posts, news headlines—achieving 98% accuracy in propaganda detection.
  - **Backend & Frontend Integration:** Built a Flask API and connected it to a React.js frontend for real-time inference; users submit text and receive probability scores instantly.
  - **Containerized Deployment:** Packaged the service as Docker containers and deployed on Heroku for scalable, zero-downtime hosting.
- **DocPilot: Documentation Testing AI-Agent:**
  - **Agentic Framework & Roles:** Developed DocPilot using multi-agent framework—incorporating Reader, Searcher, Writer, Verifier Orchestrator modules for topological code processing.
  - **Automated Validation:** Simulated real user workflows to detect documentation gaps—evaluating Completeness, Helpfulness Truthfulness metrics.
  - **Impact & Support Reduction:** Integrated context-aware checks, reducing support tickets by 15% post-deployment by proactively catching inconsistencies and reducing developer time.

## PROGRAMMING SKILLS

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- **Languages:** HTML, CSS, JavaScript, TypeScript, C++, Python
- **Frameworks/Technologies:** Django, GeoDjango, React.js, Redux, PostGIS, Docker, Git, Celery, Leaflet.js