# SHREYAS SHUKLA

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**Software Engineer | Machine Learning & AI**

## Education

**Northeastern University** — Expected Jun. 2027
*Master of Science in Artificial Intelligence, Concentration in Machine Learning* — *Boston, MA*

**Northeastern University** — Sep. 2022 – Jun. 2026
*Bachelor of Science in Computer Science, Concentration in Artificial Intelligence* — *Boston, MA*

## Experience

**Northeastern University – ExamEngine** — Sep. 2025 – Dec. 2025
*SWE Consultant | FastAPI, PostgreSQL, AWS, Terraform, GitHub Actions* — *Boston, MA*

- Designed a graph-coloring scheduler in Python that resolved exam conflicts for 3,000+ students in under 2 minutes
- Built FastAPI services with PostgreSQL + SQLAlchemy, supporting registrar workflows with versioned migrations
- Supported AWS provisioning via Terraform (ECS/Fargate, RDS, S3, ALB) for repeatable deploys
- Extended CI/CD with GitHub Actions for tests and Docker image builds/pushes, improving release reliability
- Enforced hard/soft constraints across 1,500+ courses, 270 rooms, and 25 time slots for 15,000+ students

**Quantum Business Advisory** — Jan. 2025 – Jul. 2025
*AI/ML Co-op – AI Recruitment Platform | FastAPI, PostgreSQL, Alembic, BERT* — *Remote*

- Delivered a Python/FastAPI recruiting platform with PostgreSQL, cutting candidate filtering time by 60%
- Validated BERT-based resume scoring and parsing models with HF, improving applicant–job matching accuracy
- Implemented advanced job filtering, sorting, and real-time application review features for recruiter dashboards
- Created role-based React SPA with Tailwind, enhancing recruiter and applicant experience across devices
- Managed 18 Alembic migrations evolving the schema from initial setup through full production deployment

**EON Reality** — Jul. 2023 – Aug. 2023
*SWE & Automated Penetration Testing | OpenVAS, Nmap, Metasploit, Jenkins, AWS* — *Singapore*

- Identified 10+ XR platform security vulnerabilities using automated and manual penetration testing
- Automated security tests with OpenVAS, Nmap, and Metasploit in Jenkins, increasing detection speed by 25%

## Projects

**Refara – AI Soccer Referee** | *Python, React, TypeScript, FFmpeg* — Sep. 2026 – Present

- Automated Python/FFmpeg clipping with Codex to curate 621 clips from 23.8 hours of footage across 14 matches.
- Engineered a React/TypeScript review tool with keyboard shortcuts, AI-assisted labels, and annotation history
- Prepared 418 human-labeled clips with match-separated data splits and overlap weighting for model training
- Trained a classifier on frozen R3D-18 features, achieving 71.2% accuracy on 59 development validation clips

**CodeHound - AI Code Verification** | *Python, FastAPI, PostgreSQL, Docker, TypeScript* — Sep. 2026 – Present

- Built a verification system for AI-generated code, using isolated behavioral tests to detect incorrect PR patches
- Developed a 50-patch AI benchmark with 49 provisional reference labels from blinded AI review
- Improved evaluator checks to catch missed failures and accept valid alternative implementations
- Preserved versioned evaluators, reproducible execution evidence, and separate coverage and accuracy metrics

**NLP Soccer Scouting Chatbot** | *Python, Streamlit, scikit-learn* — Sep. 2025 – Dec. 2025

- Architected a role-aware scouting system indexing 2,275 professional players across 5 leagues and 96 teams
- Processed 37 FBref performance features into 6 normalized scouting dimensions for player comparison
- Engineered an ML pipeline with z-score scaling, PCA, KMeans role clusters, and cosine similarity
- Co-authored an ACL-style research paper covering system architecture, methodology, evaluation, and limitations

## Technical Skills

**Languages**: Python, Java, TypeScript, JavaScript, SQL, C++, HTML/CSS
**AI/ML**: PyTorch, TensorFlow, scikit-learn, OpenCV, Hugging Face, pandas, NumPy
**Frameworks**: FastAPI, React, Next.js, Node.js, Express.js, Flask, Streamlit
**Data**: PostgreSQL, MongoDB, SQLAlchemy, Alembic
**Cloud & DevOps**: AWS, Docker, Terraform, GitHub Actions, Jenkins, Git