Shreya Kale

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Education

Arizona State University, Tempe, AZ *Aug 2025 - Present (Expected Aug 2027)*
Master of Science in Computer Science

- **Coursework:** Foundation of Algorithms, Data Processing at scale, Cloud Computing, Machine Learning, Software Engineering

Work Experience

MALWARE ANALYST AND THREAT RESEARCHER, *Aug 2023 - May 2025*
LTI Mindtree Ltd.

- **Engineered an automated malware detection pipeline** that analyzed **5,000+ executable samples** using reverse engineering and static/dynamic analysis, improving **detection accuracy by 35%** and reducing false **positives by 60%**.
- Developed and deployed threat classification algorithms for PE, Non-PE, and PUP/UWS files, integrating ML-based detection rules and SIEM systems (Splunk, Wazuh), enhancing endpoint **security across 10K+ devices**.
- **Utilized tools like x64dbg, OllyDbg, DnSpy, and Wireshark** for .NET/MSIL analysis and debugging; created zero-day malware signatures and delivered actionable threat intelligence using the MITRE ATT&CK framework and cyber kill chain model.

Java Developer Intern *Feb 2023 - May 2023*
LTI Mindtree Ltd.

- **Implemented core Java modules** leveraging JDBC for secure database connectivity and SQL operations, contributing to stable backend services with **99% uptime**.
- Built **interactive, component-based web solutions** using **Angular** and **TypeScript**, improving UI responsiveness and enabling modular front-end architecture. Worked closely with senior developers to enhance client-side features and optimize API integrations.
- Consistently demonstrated high technical proficiency and team collaboration, earning the **'Star Performer' award** for achieving **90%+ scores across all training and milestone evaluations**. Contributed to agile development sprints, code reviews, and team discussions, gaining hands-on experience in full-stack enterprise application development.

Technical Projects

Yoga Pose Estimation Using Machine Learning GitHub Repository ↗

- **Developed a real-time yoga pose estimation system** using **TensorFlow**, **OpenCV**, and **KeyPoint detection**, achieving **92% pose classification accuracy** across 7+ yoga postures and maintaining sub-100ms inference latency for mobile deployment.
- Implemented **convolutional neural networks (CNNs)** for image processing and feature extraction, enabling precise skeletal landmark tracking; optimized the model pipeline through **data augmentation** and **frame-by-frame evaluation**, enhancing system reliability by **35%**.

Sentiment Analysis for Social Media Insights GitHub Repository ↗

- **Developed sentiment classification models** using **Hugging Face Transformers** and **BERT**, achieving **88%+ F1 score** on 20K+ social media posts; fine-tuned pre-trained models for domain-specific insights.
- Applied **text preprocessing**, **tokenization**, and **embedding techniques** to optimize real-time inference and accuracy, improving sentiment analysis throughput by **65%** compared to baseline methods.

Object Detection for Autonomous Vehicles GitHub Repository ↗

- Built a **real-time object detection system** using **YOLOv5** and **PyTorch**, achieving **85% mean Average Precision (mAP)** on datasets like **COCO** and **KITTI**, detecting pedestrians, vehicles, and traffic signs.
- Enhanced model performance using **image preprocessing**, **data augmentation**, and **GPU acceleration**, reaching **30 FPS** for deployment on edge devices in simulated autonomous environments.

Technical Skills

Languages & Frameworks: Java, JavaScript, TypeScript, SQL, React.js, Node.js, Express.js

ML & Cybersecurity Tools: TensorFlow, PyTorch, OpenCV, YOLOv5, x64dbg, DnSpy, OllyDbg, SIEM, MITRE ATT&CK

DevOps & Cloud: Docker, Git, Firebase, AWS (EC2, EKS), GCP, MongoDB, MySQL, PostgreSQL, Oracle, Jira, Postman