Nikou Zarrabi

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Professional Summary

Applied AI/ML Engineer with MS in Computer Science (Interactive Intelligence) specializing in machine learning model training, image-based computer vision, and production systems. Experience with supervised ML model development on structured and spatial datasets, implementing probability map generation, and deploying inference pipelines via REST APIs. Background in document computer vision (OCR), visual reasoning tasks, and building scalable production software with Python, Django, and cloud platforms.

Technical Skills

- **Languages:** Python, JavaScript, Java, Swift, SQL, HTML/CSS
- **ML & AI:** Supervised Learning, Feature Engineering, Model Training & Tuning, TensorFlow, PyTorch, Scikit-learn
- **Computer Vision:** Probabilistic Image Analysis, Document Computer Vision (OCR), Visual Reasoning, Probability Map Generation
- **Frameworks & Tools:** Django, FastAPI, React, Playwright, SwiftUI
- **Cloud & DevOps:** AWS (S3, EC2), Google Cloud, Firebase, Docker, CI/CD Pipelines, GitHub Actions
- **Specializations:** ML Model Deployment, REST API Development, Production Systems, Automation, Full-Stack Development
- **Human Languages:** English (Native), French (Native), Spanish (Proficient), German (Intermediate)

Experience

Applied ML & Computer Vision Engineer (Football Analytics)
Contractor | 2023 – 2024
- Trained supervised ML models on structured and spatial football event data (Opta, Wyscout format), performing feature engineering and parameter tuning for predictive analytics - Built regression models for player performance metrics and market value estimation, generating out-of-sample predictions integrated into analytics dashboards - Reconstructed pixel-aligned probability maps from event-level data to replicate Expected Goals (xG) visualizations and heatmap analytics - Validated ML model outputs against image-space ground truth, ensuring spatial accuracy of probability surface generation - Deployed inference outputs via REST APIs for integration into downstream analytics systems

iOS Developer
Swimming Cars | Jan 2025 – Present
- Built production SwiftUI iOS app for carpool coordination serving 50+ users, integrating Firebase for real-time data synchronization and cloud persistence - Implemented geolocation tracking system using Apple Maps SDK with event-driven architecture for state management - Developing REST API integration layer for model inference endpoints and ML service integration - Deployed cloud-native mobile application with zero crashes through comprehensive testing and CI/CD automation

DevOps Engineer / E-commerce Tech Lead
Keivan Woven Arts | May 2024 – Jan 2025
- Built and deployed automated infrastructure for product listings across 3 platforms (Shopify, Chairish, 1stdibs), reducing manual processing time by 80% - Implemented CI/CD pipelines using GitHub Actions with automated testing and validation, reducing deployment errors by 95% - Integrated AWS S3 with Django backend for scalable image storage serving 1,000+ SKUs, improving performance by 60% - Developed Python automation scripts for cross-platform inventory synchronization and data validation

Data Automation Intern
Porsche Cars North America | Jun 2018 – Nov 2018
- Developed OCR-based document processing pipeline for invoice automation, extracting structured data from scanned invoices with 99% accuracy across 500+ documents per week - Implemented PDF parsing system using OCR technology to digitize paper-based workflows, reducing manual processing time by 75% - Built production computer vision pipeline integrating OCR outputs into automated workflows, eliminating 10,000+ pages annually during critical business transition

Software Engineer (Full Stack & E-commerce)
Keivan Woven Arts | Jun 2021 – Dec 2022
- Developed Django-based product catalog system with REST APIs managing 1,000+ SKUs across multiple sales channels - Built Python automation scripts using Playwright for web scraping and testing, reducing QA time by 70% - Implemented data validation pipelines and error handling systems, reducing product listing errors by 85% - Designed and deployed RESTful APIs for platform integration (Shopify, Chairish, 1stdibs) with JSON data serialization

Projects

AI-Powered Employment Assessment Platform | GitHub
- Trained supervised ML models for candidate assessment using TensorFlow, performing feature engineering and model tuning for role-specific evaluations - Developed predictive scoring system with bias-free evaluation criteria, integrating trained models into production inference pipeline - Built React frontend and Django backend REST API for serving model predictions and supporting real-time assessments

Visual Reasoning AI System | *Georgia Tech Coursework*
- Implemented visual reasoning algorithms solving Raven's Progressive Matrices using PIL for image processing - Developed pattern recognition and spatial relationship extraction directly from image data - Demonstrated symbolic AI approach to visual reasoning, identifying geometric transformations and logical patterns without deep learning

Django Health Tracker (Raspberry Pi) | GitHub
- Full-stack health monitoring application with Django backend and JavaScript frontend, deployed on Raspberry Pi - Implemented real-time data visualization and threshold-based alerting for personal health metrics tracking

Package Sorting Algorithm | GitHub
- Developed classification logic for robotic automation system with comprehensive test coverage - Implemented rule-based algorithm for package categorization based on dimensional and weight constraints

Education

MS in Computer Science — Interactive Intelligence
Georgia Institute of Technology, August 2023
Coursework: Artificial Intelligence, Knowledge-Based AI (Visual Reasoning), Machine Learning, Robotics: AI Techniques (Perception, Spatial Reasoning), Software Architecture & Analysis

BS in Mathematics
University of Georgia, May 2018

Certifications

- Generative AI with Large Language Models, Coursera (2024)