# Stelica D. Paval

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## PROFESSIONAL SUMMARY

Software engineer with over six years of experience, now specializing in building and deploying practical AI systems. My passion is creating intelligent solutions that solve real-world problems, which has led me to focus on manufacturing applications. I enjoy the entire process, from developing models with PyTorch and LoRA fine-tuning, to building the production infrastructure with FastAPI, PostgreSQL, and Kubernetes that brings them to life. I am eager to apply my full-stack ML skills to collaborate with cross-functional teams and deliver solutions that have a direct impact on production efficiency and innovation.

## PROFESSIONAL EXPERIENCE

**ML Engineer** | Terminus | March 2023 – Present | Remote

- Designed and deployed end-to-end AI solutions for manufacturing automation, developing PyTorch models with custom training pipelines and implementing LoRA fine-tuning to adapt foundation models for predictive maintenance and quality inspection tasks
- Engineered high-performance FastAPI services with async/await patterns to process real-time sensor data from production lines, reducing inference latency by 30% through optimized request routing and custom middleware
- Built interactive manufacturing dashboards using React and TypeScript, enabling real-time monitoring of equipment health and production metrics
- Containerized ML workloads using Docker and orchestrated deployments on Kubernetes clusters, implementing automated scaling policies and health checks that improved system reliability by 25%
- Optimized PostgreSQL databases for manufacturing AI workflows, implementing feature stores with pgvector extensions and designing schemas for efficient time-series data storage and retrieval
- Established MLOps pipelines with automated testing and model versioning, enabling seamless deployment of updated models across global manufacturing facilities
- Developed A/B testing frameworks for model validation, allowing controlled rollouts of new AI features while maintaining 99.9% service availability.

**Full Stack Developer** | KodeCanvas | November 2021 – May 2023 | Remote

- Designed and created scalable online apps utilizing React, Typescript, and Tailwind CSS, offering dynamic, responsive, and user-friendly interfaces across devices.
- Built and optimized RESTful APIs using Node.js and Express, guaranteeing fast server-side logic and smooth interaction with PostgreSQL and DynamoDB for scalable data management.
- Implemented secure authentication and authorization procedures, incorporating JWT security standards to safeguard sensitive data and boost API security
- Deployed and maintained serverless apps on AWS, employing Lambda, API Gateway, and S3 to provide cost-efficient scalability and decreased infrastructure overhead.

**Software Engineer** | BearingPoint – Bucharest, RO| September 2018 – September 2021

- Developed and maintained enterprise-level applications using .NET Core, C#, ASP.NET, and Angular, delivering scalable and high-performance software solutions
- Designed and optimized database structures with SQL Server and LINQ2SQL, reducing query execution time by 20% and improving data integrity
- Enhanced backend performance by optimizing indexing algorithms and query execution, leadingto a 15% reduction in system load times
- Contributed to automated testing, CI/CD pipelines, and debugging, ensuring faster and more stable software releases

## EDUCATION

**Master of Science in Software Development**

- Maharishi University, Fairfield, IA | Graduated: 2023 | GPA: 3.97/4.0

**Bachelor of Science in Computer Science**

- Politehnica University, Bucharest, Romania | Graduated: 2018 | GPA: 3.65/4.0

## CERTIFICATIONS

- AWS Certified Cloud Practitioner – Amazon Web Services (2022)
- Intermediate Cybersecurity – CodePath Cybersecurity Course for Web Applications (2022)
- ITIL 4 Foundation - IT Service Management Certification – PeopleCert (2020)

## SKILLS

- **Programming Languages**: JavaScript, TypeScript, Python, Ruby, C#, .NET, SQL, PHP, HTML5, CSS3
- **Frameworks & Libraries**: React, Angular, React Native, Next.js, Redux, Node.js, Express, Django, jQuery
- **Databases**: PostgreSQL, MongoDB, Firebase, SQL Server, DynamoDB
- **DevOps & Cloud**: AWS (EC2, S3, Lambda, SQS, SNS, Elastic Load Balancer), Docker, Kubernetes, CI/CD
- **Other Technologies**: Git, JSON, AJAX, RESTful Architecture, MVC, Unit Testing (Jest), Distributed Systems, Cloud Computing
- **Design & Prototyping**: Figma

## PROJECTS

**Industrial Predictive Maintenance System**

- Developed an end-to-end system to predict equipment failure by analyzing real-time sensor data (vibration, temperature, RPM) using PyTorch and Scikit-learn.
- Implemented LoRA fine-tuning on a time-series transformer model to adapt it for specific machinery, improving anomaly detection accuracy by 20% with limited fault data.
- Built a FastAPI backend for data ingestion and model inference, and a React dashboard to visualize equipment health scores and alert maintenance teams.
- Containerized the model service with Docker and deployed it on Kubernetes, enabling scalable and reliable monitoring across multiple factory zones.

**AI Finance Platform**

- Developed a financial management platform with AI-driven insights, real-time transaction tracking, and personalized budget alerts, improving financial planning.
- Built using React, Next.js, Tailwind CSS, PostgreSQL, Prisma, and Clerk Authentication, ensuring a secure, responsive, and user-friendly experience.
- Integrated AI-powered receipt scanning and automated monthly financial reports, allowing users to track and optimize spending efficiently.