Alan Halvey
Senior Senior Software & Machine Learning Engineer

SUMMARY

A seasoned Senior Software & Machine Learning Engineer with extensive experience in backend engineering, AI/ML, and data engineering. With a decade of professional involvement, the engineer boasts a deep understanding of distributed computing and database design, having worked with technologies like .NET, Python, Spark, and Kubernetes. Education includes a BSc in Computer Science & Artificial Intelligence, reinforcing a solid foundation in modern engineering principles. Holds a proven track record of implementing intelligent systems, such as conversational AI platforms and deep learning models, that have significantly improved user engagement and reduced operating costs. The engineer's technical acumen is further highlighted by expertise in full-stack development, including the use of React, Svelte, and Angular, and in creating robust cloud-based solutions leveraging AWS. This combination of practical experience and education makes the engineer a standout candidate for driving innovation and efficiency in complex software environments.

TECHNICAL SKILLS

Main Technical Skills	.NET (4 yr.), ASP.NET Core Framework (4 yr.), Node.js, Python (7 yr.), FastAPI
Programming Languages	JavaScript, Python (7 yr.), TypeScript
.NET Platform	ASP.NET Core Framework (4 yr.), Entity Framework, .NET (4 yr.)
Python Frameworks	FastAPI
AI & Machine Learning	LangChain, LlamaIndex, Mlflow, OCR, PyTorch, Scikit-learn, TensorFlow
JavaScript Frameworks	Node.js
Python Libraries and Tools	PyTorch, Scikit-learn, TensorFlow
Data Analysis and Visualization Technologies	ETL Pipelines
Databases & Management Systems / ORM	Redis

Deployment, CI/CD & Administration	Blazor
Message/Queue/Task Brokers	Celery
SDK / API and Integrations	FastAPI
UI/UX/Wireframing	Figma
Third Party Tools / IDEs / SDK / Services	Visual Studio

WORK EXPERIENCE

Software Engineer (Backend & Machine Learning), Pinterest Backend & Machine Learning Enhancements

Duration: June 2025 – Present
Summary: Architected and delivered backend systems supporting Pinterest services, built conversational AI platform, engineered data pipelines, led deep learning model training and A/B testing.
Responsibilities: Backend system architecture, conversational AI pipeline development, data pipeline engineering, deep learning model training and testing, mentorship, exploratory initiative leadership.
Technologies: ASP.NET Core, C#, Spark, RAG, LangChain, LlamaIndex, NLP

Senior Software Engineer (Backend, ML & Distributed Systems), Private Equity Platform Automation

Duration: Aug 2021 – May 2025
Summary: Built high-availability financial systems, automated investor/admin portals, designed deep learning system for structured data extraction, developed distributed microservices, built CV/NLP pipelines, delivered frontend from Figma designs.
Responsibilities: Backend development for financial systems, portal automation, deep learning system design, distributed microservice development, CV/NLP pipeline construction, frontend development.
Technologies: .NET, C#, Python, AWS, Kubernetes, Blazor WASM, FastAPI, Flaskor, NSwag, Redis, MongoDB, Svelte

Computer Vision & Machine Learning Engineer, Corrosion Detection Model Optimization

Duration: Aug 2019 – May 2021
Summary: Doubled the accuracy and processing speed of an industrial corrosion detection model, integrated annotation management tool and enhanced ML pipeline.
Responsibilities: Machine learning model improvement, annotation management integration, ML pipeline enhancement.
Technologies: Label Studio, MLflow

Software Development Engineer, Medical Insight Extraction Pipeline

Duration: Nov 2018 – July 2019
Summary: Built OCR + NLP pipeline for ultrasound report analysis and CV system for medical detail recognition, delivered integrated mobile/web app for clinicians.
Responsibilities: OCR/NLP pipeline construction, CV system engineering, mobile/web

application development.
Technologies: OCR, NLP, Computer Vision, Mobile/Web Development

Full Stack & ML Engineer, Invoice Understanding & Retail Inspection AI

Duration: Mar 2016 – Nov 2018
Summary: Developed invoice understanding system using CV, OCR, NLP, trained NER models and built deep-learning OCR engine, created retail AI mobile app.
Responsibilities: Microservices-based system development, NER model training, deep-learning OCR engine creation, mobile AI app development.
Technologies: Computer Vision, OCR, NLP, Deep Learning, Microservices

EDUCATION

- **BSc in Computer Science & Artificial Intelligence**
Data Science focus
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