Michael Boiman

Quality Engineering & AI Automation Expert • 4+ Years AI Development • 20+ Years Quality Assurance

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Quality Engineering & AI Competencies

Quality Engineering & AI Automation
Quality-first automation: Email bots, invoice processing, workflow automation with 80% workload reduction, measurable cost savings, processing time from hours to seconds

AI Quality Engineering Excellence
80% auto-generated tests & test cases, IDE integration, Go/No-Go in minutes instead of hours, 50% less development time, 80% fewer inquiries

Next-Gen AI Protocols & Agentic Systems
MCP & A2A protocol implementation, multi-agent orchestration, JSON-RPC, secure agent-to-agent communication, enterprise-ready

RAG Systems & Enterprise NLP
Vector embeddings, LangChain, Q&A bots, spaCy/NLTK, 95% accuracy, EU standards, contextual intelligence

Multi-Cloud AI Architecture
Azure OpenAI, Google Cloud AI, serverless MLOps, auto-scaling, real-time monitoring, production-grade deployment

Transparency & Business Intelligence
Real-time dashboards, quality visualization, end-to-end monitoring, KPI automation, single source of truth

Career Profile

Quality Engineering & Enterprise AI Expert with 20+ years of quality assurance and 4 years of specialized AI development. Transform business processes through measurable, ROI-optimized quality automation:

🎯 **Quality Engineering Excellence**

- **20+ Years QE Expertise:** Test automation, CI/CD quality gates, end-to-end monitoring
- **AI-driven Test Generation:** 80% automatically generated test cases, 50% less development time
- **Quality Dashboards:** Real-time monitoring across 10 test tools, Go/No-Go decisions in minutes instead of hours
- **Performance Testing:** JMeter, Gatling, load testing with automated analysis

🚀 **Business Impact & ROI**

- **80% workload reduction** in automation & invoice processing with **measurable cost savings**
- **80% fewer inquiries** through transparent quality monitoring systems
- **Quality-First Automation:** Playwright, Cucumber, Gauge integration in CI/CD pipelines

🤖 **AI Technology & NLP Excellence**

- **Enterprise LLMs:** GPT-4, Claude, Gemini integration with production-grade security
- **Agentic AI & Protocols:** MCP, A2A implementation for multi-agent orchestration
- **NLP & Document Processing:** spaCy, NLTK, Vector Databases (Pinecone, Elasticsearch), 95% accuracy
- **Multi-Cloud AI Architecture:** Azure OpenAI, serverless AI, MLOps, scalable deployment

⚡ **DevOps & Technical Leadership**

- **DevOps & CI/CD:** GitHub, GitLab, Jenkins, container orchestration, contract testing
- **Performance & Monitoring:** Load testing, incident analysis, Instana, Azure Log Analytics
- **Full-Stack Development:** Java, Python, JavaScript, Swift, 20+ years software architecture
- **Team Leadership:** Scrum Master, Product Owner, Quality Lead for cross-functional teams

TECHNISCHE SKILLS

Quality Engineering • Playwright • Cucumber/Gauge • Python • LLMs & AI APIs • LangChain • CI/CD • Kubernetes • Azure Functions • Grafana • Elasticsearch • REST APIs • Docker • JMeter • Gatling

EDUCATION

Diploma in Computer Science (UAS)
Cologne University of Applied Sciences, Gummersbach
2000 – 2005

ISTQB Certified Tester
2005

LANGUAGES

Language	Level
German	Native
English	Professional
Russian	Conversational
Hebrew	Conversational

ZUSÄTZLICHE QUALIFIKATIONEN

Scrum Master • Product Owner • ISTQB Certified • 4+ Years AI Development, 20+ Years Quality Engineering

PROJECTS & SOLUTIONS

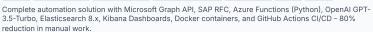### AI-Driven Chatbot for Trade-Fair Interaction

Python • OpenAI GPT-4 • Streamlit • FastAPI • Vector Embeddings

Development of an interactive chatbot using RAG (Retrieval-Augmented Generation), OpenAI GPT-4, Vector Embeddings, Python FastAPI, and Streamlit frontend to optimize user interaction on trade-fair websites.

Email Classification and Processing Workflow

Python | Azure Functions | OpenAI GPT-3.5 | Microsoft Graph API | Elasticsearch | Kibana | Docker

Complete automation solution with Microsoft Graph API, SAP RFC, Azure Functions (Python), OpenAI GPT-3.5-Turbo, Elasticsearch 8.x, Kibana Dashboards, Docker containers, and GitHub Actions CI/CD - 80% reduction in manual work.

Enterprise AI Consulting: From Strategy to Implementation

AI Strategy | Process Analysis | ROI Assessment | Implementation Planning | Change Management | Executive Workshops | Quality Engineering

Target Audience: C-Level, Management, Product Owners, Business Analysts **Consulting Services:** • **Strategy Development:** From AI vision to measurable implementation roadmap • **Process Analysis:** Identification of automation potential, quality-first assessment • **ROI Assessment:** Business cases, cost savings, amortization calculations • **Executive Workshops:** Hands-on strategy sessions with live-demo business cases • **Change Management:** Team adoption, training concepts, resistance management • **Implementation Support:** From concept to productive AI solution **Deliverables:** AI strategy template, ROI calculator, implementation roadmap, executive workshop, implementation support

Quality Dashboard - Real-time Overview

Grafana | Elasticsearch | Python | CI/CD | Playwright | Jira API | Confluence API | LeanIX | PDF Generation

Fully automated end-to-end solution for real-time quality monitoring across 10 test tools, 5 environments plus multi-source integration (Pipeline, LeanIX, Jira, Confluence) for automated PDF reports with open issues, bugs, and technical debt. Impact: -80% inquiries, Go/No-Go decisions in minutes instead of hours.

24/7 Automated Legacy Migration Validator: Dual-Run Quality Engineering

Java | Cucumber | Kibana | Graylog | Elasticsearch | Container | CI/CD | Mainframe | Dashboard Engineering | Test Automation

Enterprise Legacy Transformation with Fully Automated Quality Assurance The Challenge: Complex mainframe price calculation with millions of combination possibilities needed secure migration - without quality loss or data errors. **The Solution:** 24/7 Dual-Run Validation System with intelligent deviation analysis • **Continuous Testing:** Randomly generated tests across all variations around the clock • **Real-time Monitoring:** Live dashboard with immediate deviation detection on every deployment • **Complete Traceability:** Every deviation uniquely logged with technical and business context • **Automated Root Cause Analysis:** Direct access to calculation paths and error sources • **Quality Intelligence:** Kibana dashboards for end-to-end quality overview **Measurable Impact:** Quality metrics improved from 30% to 96% - secure migration without data loss, complete transparency over migration status

wecation

Flutter | Google Cloud | Firebase | Dart

wecation is a collaborative solution for organising shared experiences: plan, search, coordinate with friends or colleagues and enjoy the activity together! Built with Flutter and Google Cloud.

Developer Workshop: AI-Agent Development & Integration

OpenAI GPT-4o | Anthropic Claude | Google Gemini | MCP | A2A | Playwright | JSON-RPC | IDE Integration | CI/CD

Target Audience: Developers, Technical Leads, DevOps Engineers **Workshop Content:** • **Hands-on AI Agent Development:** Live coding with GPT-4o, Claude, Gemini • **Next-Gen Protocols:** MCP & A2A implementation for enterprise integration • **Browser Automation:** Playwright-MCP for automated test generation • **IDE Integration:** AI assistance in VS Code, Cursor, GitHub Copilot workflows • **Multi-Agent Orchestration:** JSON-RPC, secure agent communication • **Practical Demos:** Jira integration, Elasticsearch queries, GitHub workflows **Deliverables:** Complete source code, slides, hands-on exercises, production-ready templates

Django SLA Dashboard - Enterprise Service Monitoring

Django | Python | PostgreSQL | Chart.js | WebSockets | Docker | REST API

Enterprise SLA Monitoring Dashboard for Service Level Agreements Development of a comprehensive SLA monitoring system as part of a BKS evaluation project (2023-2025) for monitoring Service Level Agreements with real-time metrics and automated alerting. **Core Features:** • **Real-time Monitoring:** 24/7 monitoring of 24+ services with response time tracking (Ø 147ms) • **SLA Compliance:** Automatic calculation and visualization of SLA metrics (99.97% availability) • **Incident Management:** Active incident tracking with medium/low priority classification • **Performance Analytics:** Response time distribution with detailed histograms (<50ms to >500ms) • **Availability Timeline:** 24h history with minute-level resolution and trend analysis • **Alert System:** Proactive alerting for SLA violations and performance degradation **Technical Highlights:** • Django 4.2 with async views for high-performance data processing • PostgreSQL with TimescaleDB extension for time-series data • Django Background Tasks for asynchronous processing • WebSocket integration for live dashboard updates • RESTful API for service integration and CSV export • Docker-based deployment with Kubernetes-ready architecture **Impact:** 60% reduction in MTTR (Mean Time To Repair), proactive incident prevention through trend analysis

QualityCluster

Hugo | JavaScript | GitHub Actions | CI/CD

QualityCluster is an alliance of quality engineers jointly developing better solutions in software quality assurance. Our goal is to implement more quality through a higher degree of automation.

PROFESSIONAL EXPERIENCE

Workshop: Development with Generative Language Models
06/2025

Developer Workshop - Agent-based Software Development

Developer Workshop: Comprehensive workshop on modern AI agent development with practical demos and live coding

Workshop Content

- Development with LLMs (GPT-4o, Claude, Gemini) and token optimization
- Model Context Protocol (MCP) & Agent-to-Agent (A2A) protocol implementation
- Agent orchestration with JSON-RPC and multi-agent systems
- Browser automation with Playwright-MCP for automated test generation
- Live demos: Jira integration, Elasticsearch queries, GitHub workflows
- Prompt engineering & rule-based agent control (.cursorrules, instructions)
- TDD workflows with AI assistance and automated PR creation
- Task Master AI agent for project management and code scaffolding

Technologies & Tools

- OpenAI GPT-4o, Anthropic Claude, Google Gemini
- Model Context Protocol (MCP), Agent-to-Agent Protocol (A2A)
- GitHub Copilot, Cursor, VS Code AI extensions
- Playwright, browser automation, web scraping
- JSON-RPC, REST APIs, multi-agent communication

Complete workshop with slides, live demos, and practical exercises for modern AI-assisted development workflows.

Presentation: Efficient Documentation through Automation
04/2025

Enterprise Presentation - AI-powered Documentation Workflows

Enterprise Presentation: Demonstration of modern automation approaches for centralized, current documentation and sustainable project success

Key Focus Areas

- Single Source of Truth: Central truth in Confluence, avoiding redundant versions
- Shift-Left Documentation: Parallel code and documentation development for higher currency
- Automation First: Bots and CI/CD jobs for recurring tasks, automatic updates
- OpenAPI Documentation: Automatic generation on code merge, Consumer-Driven Contracts
- Documentation Debt Management: Dashboard-based visibility, Tech-Debt labels
- Automated Quality Assurance: Unit tests, integration, end-to-end reports

Technical Solutions

- Template-based standardization with mandatory and optional fields
- Label system instead of traffic lights for multi-dimensional filtering (status:draft, domain:payments)
- Semantic Release for automatic release notes
- Code changes aligned with documentation
- KPI/OKR dashboards for measurable progress

Tools & Integration

- Confluence, GitHub, Jira, MkDocs, OpenAPI
- CI/CD pipeline integration for documentation automation
- Monitoring and dashboard creation for Documentation Debt

Platform Quality Architect (CI/CD, Monitoring, Automation)
08/2021 – 05/2025

DVAG

Test management & coordination, as well as introduction of CI/CD with quality-gate setup. Acting as cross-team Quality Lead: onboarding, guidance, consulting and training for the introduction of quality metrics and test automation within the pipeline across teams.

Key responsibilities

- Design and implementation of functional and technical dashboards with Grafana for real-time quality measurement
- Documentation of quality metrics covering the measurable sprint progress
- Design and setup of CI/CD pipelines for multiple development teams (backend + frontend)
- Introduction of quality gates to safeguard quality within the CI/CD pipeline
- Adoption of Gauge (BDD)
- Roll-out of Playwright and integration into the existing CI/CD pipeline
- Functional and technical incident analysis
- Consultancy, design and implementation of solutions for quality-related issues

Tools

- IntelliJ / Visual Studio Code
- Java / JavaScript / TypeScript
- Playwright / Gauge / Taiko / Karate
- Python for processing and analysis of test and reporting data
- CI/CD / GitHub – reusable workflows
- Helm / Containers
- JIRA / Confluence
- Grafana
- Behaviour-Driven Development
- Consumer-Driven Contracts (Pact.io)

Technical Lead & AI Automation Architect

01/2024 – 04/2025

BKS

Technical lead & development: Design and implementation of a scalable automation solution for processing e-invoices and PDF invoices fetched from a mailbox of a leading online job platform. Full responsibility from requirements analysis through implementation to production go-live.

Focus areas:

- **Workflow automation**: Extraction, analysis and classification of incoming invoices using Python and Azure Functions.
- **E-invoice classification & data extraction**: Full processing in accordance with EU standard EN 16931 (ZUGFeRD, XRechnung), including structural and content parsing.
- **Salesforce integration**: Forwarding prepared invoice data via email to the downstream system for Salesforce import.
- **Auditing & logging**: Comprehensive documentation of all processing steps plus storage of original email content in the processing log.
- **Outlook management & SharePoint archiving**: Automatic moving and categorising of emails into predefined Outlook folders; archiving of original and generated invoice documents via Microsoft Graph API.
- **Monitoring & logging:** End-to-end real-time monitoring with Kibana, including alerting and dashboard creation.
- **Team coordination:** Managing the developer team incl. code reviews.

Tools & technologies

- Azure Functions: Serverless orchestration of automation workflows.
- Python: Core logic for data extraction, classification and integration with automated CI/CD processes, packaging, and comprehensive unit and integration tests for quality assurance.
- Microsoft Graph API: Access to Outlook mailboxes and SharePoint libraries.
- GitHub: Version control, CI/CD pipelines and collaborative development.
- Kibana: Monitoring, log analysis and performance dashboards.
- Streamlit: For developing an interactive web application for visualization.

AI Engineering Lead & ML Solutions Architect

04/2023 - 04/2024

BKS on behalf of Ryze

Project management & technical lead: Development and deployment of an AI-driven email bot to automate customer communication, AI-assisted processing of incoming emails and triggering of follow-up activities in existing SAP systems. Responsible for end-to-end project coordination and team management from idea to implementation."

Focus areas:

- **Development of ML models**: Design and training of specialized models for effective email classification, implemented via Azure Functions.
- **API integrations**: Seamless connection to Microsoft Outlook 365 via Microsoft Graph API and to SAP systems for customer data checks.
- **Process automation**: Automatic moving of emails based on classification and specific business rules, including complaint handling.
- **DevOps and monitoring**: Implementation of CI/CD pipelines and use of Kibana for monitoring.
- **Development of a Streamlit-based user interface**: Improved testability and visualization of process results.
- **Team coaching**: Technical guidance for developers with regular code reviews and problem-solving sessions.

Tools & technologies

- Azure Functions: For serverless application architectures and ML model execution.
- Python: Main programming language for the email bot and ML models.
- Microsoft Graph API: For accessing and processing emails in Microsoft Outlook 365.
- SAP API: For querying customer data and communicating with SAP systems.
- GitHub: For version control, CI/CD pipelines and collaborative development.
- Kibana: For real-time monitoring and system performance analysis.
- Streamlit: For developing an interactive web application for system monitoring.

AI Workshop for Business Integration

2023

Applications of AI in Business Context

AI workshop: Comprehensive presentation and live demonstration of innovative AI applications for business with a focus on practical implementation, theory and code examples.

Presentation content

- Comprehensive overview of AI fields and patterns (supervised/unsupervised/semi-supervised learning)
- Deep dives into machine learning, deep learning and natural language processing
- Detailed look at GPT models and their functionality (next token prediction)
- Practical prompt engineering with examples for various use cases
- Introduction to tools such as Hugging Face, Stable Diffusion, Midjourney and Auto-GPT

Practical workshop part

- Development of an intelligent Q&A bot with OpenAI GPT-3.5-Turbo
- Live development of a web scraper for data acquisition
- Extraction and vectorization of text embeddings with OpenAI models
- Implementation of similarity search for context-based answers
- Similarity analysis and visualization of results
- Creation of an interactive Streamlit user interface for the Q&A bot

Technologies used

- OpenAI API (GPT-3.5-Turbo, Embedding-Ada-002)
- Python with Pandas, NumPy and Streamlit
- Vector embeddings and cosine similarity for semantic search
- Web scraping with BeautifulSoup and Requests
- Prompt engineering and AI integration into business processes
- Integration via RESTful APIs

The full presentation is available at [Pitch.com](https://pitch.com/public/bc7eaebb-5fb1-4e6f-bf84-ce9363c7abc0). The complete source code of the developed Q&A bot is documented in my [GitHub repository](https://github.com/boiman-solutions/workshop-q-a-scrap-bot).

DevOps Quality Lead & Dashboard Architect

01/2017 - 05/2021

DB Vertrieb

Test management, test coordination, test automation – agile (Kanban, Scrum, SAFe): Coordination as PO of a cross-team QA team including cross-team onboarding, support, consulting, training

Key responsibilities

- Agile quality assurance through the design of quality gates in the CI/CD pipeline
- Design and implementation of functional and technical dashboards with Kibana, Graylog, Grafana, Instana & Elastic Search
- Introduction of domain-specific logging for microservices to transparently track calculations and service interactions
- Performance tests within CI/CD with Gatling / JMeter and analysis using Kibana, Graylog, Grafana and Instana
- Documentation of quality metrics on the progress of measurable sprint quality
- Design and setup of CI/CD pipelines for data tests
- Functional and technical problem analysis
- Consulting, design and implementation of solutions for quality-related issues
- Setup of Junit, unit tests and integration tests, among others with Java Cucumber
- Development of a hybrid app for presenting (reviewing) results on a web or mobile platform
- Coordination of integration tests between the involved teams

Tools

- IntelliJ
- Java
- Cucumber / Cypress
- JMeter / Gatling
- CI/CD / GitLab CI / Jenkins
- Helm / Docker
- JIRA / Confluence
- Kibana / Grafana / Instana / Graylog
- Behaviour Driven Development
- Consumer Driven Contracts (Spring Cloud Contract)
- Ionic (hybrid app)
- Selenium

Performance Engineering Lead & Test Architect

09/2015 - 01/2017

DB Systel

Load and performance tests and analysis – test manager, test designer, analyst: Development, execution and analysis of load and performance tests

Key responsibilities

- Requirements management
- Status reports
- Customer consulting
- Documentation in the form of test concepts, analyses, management reporting and wiki documentation
- Setup and execution of load and performance tests
- Analysis of results & performance logs

Tools

- Visual Studio
- Eclipse
- JMeter
- Git
- JIRA / Confluence
- Excel & Access VBS
- Interfaces: HTTP, WS, REST, MQ, JMS

Senior iOS Developer & Mobile Architect

04/2015 - 09/2015

Telekom

Senior iOS Developer: Further development of the rebuilt version of Deutsche Telekom's **Customer Center App**, extension with new functionalities for IFA.

Key responsibilities

- Swift
- iOS 8
- Requests & responses to backend
- Error handling
- iPad / iPhone
- Scrum

Tools

- Xcode
- Git
- JIRA

Quality Assurance Lead & Test Automation Architect

05/2009 - 03/2015

Siemens

QA, test management, test automation, requirements engineering: A total of 5 projects were supported as QA & test manager and successfully implemented

Projects

- SIPCA - Management system for employee annual targets and bonus calculation
- STM - Application and travel expense recording (Frontend: Web / Backend: SAP)
- GPM2 - Share bonus program for employees (Frontend: Web / Backend: JBoss)
- PATAC
- SOM - Management and overview of OrgUnits

Key responsibilities

- Creation of technical test concepts and test plans
- Defect tracking
- Management of CRs, communication between customers and developers
- Creation, maintenance and scheduling of test automation
- User acceptance tests
- Training of new testers and test automation engineers
- Support as test manager after project completion in regular operation
- Setup of acceptance tests
- Transfer of functional specification and detailed specification to Quality Center
- Monitoring of implemented requirements against the detailed concept

Tools

- HP ALM
- HP UFT
- HP QC
- Quick Test Pro

Performance Test Engineer & Load Testing Specialist

03/2009 - 05/2009

ING-DIBA

Load and performance tester: The goal of the project is the design and development of LoadRunner scripts for load testing a bundle of approx. 20 J2EE applications in a banking portal

Key responsibilities

- Creation of test scripts in LoadRunner with the http protocol
- Execution of load tests and analysis of results
- Monitoring and reporting

Tools

- LoadRunner

Performance Test Engineer & Quality Consultant

01/2006 - 12/2008

British Telecom, Mobiliar, DB-Systel, Sparkassen Informatik, Loyalty Partner, Telekom, Itelium, Deutsche Post, Postbank

Load and performance tester / tester: Various projects, predominantly load & performance tests

Key responsibilities

- Creation of test scripts in LoadRunner with the http protocol
- Execution of load tests and analysis of results
- Monitoring and reporting

Tools

- LoadRunner