



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

Next-Gen AI Protocols & Agentic Systems

MCP & A2A protocol implementation, Google Agent Development Kit (ADK), multi-agent orchestration, JSON-RPC, secure agent-to-agent communication, enterprise-ready

Multi-Cloud AI Architecture

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

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

RAG Systems & Enterprise NLP

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

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

TECHNICAL SKILLS

Quality Engineering

Playwright

Cucumber/Gauge

Python

LLMs (GPT-4/Claude/Gemini)

MCP & A2A Protocols

Google ADK

LangChain

Peppol/E-Invoicing

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

German	Native
English	Professional
Russian	Conversational
Hebrew	Conversational

ADDITIONAL QUALIFICATIONS

Scrum Master

Product Owner

ISTQB Certified

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

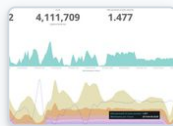
Grafana Elasticsearch Python CI/CD Playwright
Jira API Confluence API LeanIX PDF Generation



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.

E-Invoicing Automation Platform

Python Azure Functions Peppol Storecove SAP ByDesign ZUGFeRD
Factur-X UBL Hexagonal Architecture

Fully Automated E-Invoice Processing to EU Standards **Core Features:** • **Peppol Network Integration:** Connection to European e-invoicing network via Storecove Access Point • **Multi-Format Support:** ZUGFeRD, Factur-X, XRechnung, UBL 2.1, CII (EN 16931 compliant) • **ERP Integration:** Automatic transfer to SAP ByDesign with validation and error handling • **Hexagonal Architecture:** Domain-driven design with Ports & Adapters for maximum testability • **Dual-Channel Inbound:** Storecove Webhook (Push) + Email Inbox (Pull) for redundant processing **Impact:** Production system (v2.1.0) with full EU compliance and 100% automated invoice processing

Medical Transcription System

Python Whisper Pyannote Ollama Llama3 Apple Silicon SOAP Protocol

GDPR-Compliant Transcription of Doctor-Patient Conversations **Core Features:** • **100% Local:** No cloud uploads, all processing on local machine (Privacy-by-Design) • **Speaker Diarization:** Automatic doctor/patient distinction with Pyannote 3.1 (2.6% WER) • **SOAP Protocol Generation:** Automatic creation of structured medical protocols • **Open Source AI:** Ollama with Llama 3.2 for intelligent summaries without API costs • **Apple Silicon Optimized:** Native performance on M1/M2/M3 Macs **Impact:** Healthcare-ready AI solution with full GDPR compliance and zero cloud dependency

AI Learning Platform

Astro React 19 TypeScript Supabase EU AI Act

EU AI Act Compliant Learning Platform for AI Workshops **Core Features:** • **Article 4 Compliance:** EU AI Act compliant certifications with audit trail • **15+ Learning Card Types:** Interactive quizzes, exercises, adaptive tests with scoring system • **6 Visual Themes:** Learning, AI-Team, Star Trek, Nerd, Helldivers, Wednesday • **Progress Tracking:** localStorage-based tracking with HR export functionality • **85 Automated Tests:** Quality-assured learning platform **Impact:** Enterprise-ready e-learning for AI governance and structured qualification programs

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 - all three models used equally in projects
- Model Context Protocol (MCP) & Agent-to-Agent (A2A) protocol implementation
- Google Agent Development Kit (ADK) for multi-agent systems and tool integration
- 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 (equal expertise across all three LLMs)
- Google Agent Development Kit (ADK), 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.

LLM Infrastructure Architect & Automation Engineer

06/2025 – present

BKS - AI Research & Development

Development of LLM-orchestrated Enterprise Development Ecosystem: Fully integrated system for knowledge management, project automation, and development workflows with equal expertise in GPT-4, Claude, and Gemini.

Key Responsibilities

- **Open Source MCP Server Portfolio:** Development and publication of 3+ MCP servers on GitHub (bks-wiki-mcp, hubspot-mcp-bks, bks-codex) with uvx distribution, Claude Desktop integration, and multi-format support (Markdown, JSON, YAML)
- **Multi-Agent Orchestration System:** Implementation of production-ready A2A system with Orchestrator Agent (routing hub) and Knowledge Agent for inter-agent communication, capability-based Agent Cards, and JSON-RPC 2.0
- **Git Wiki Transformation:** Migration of Confluence knowledge base to structured Git-based wiki with hierarchical organization and multi-repository architecture (submodules for customer projects)
- **MCP Navigation Server:** Development of Model Context Protocol server (Python) with intelligent hierarchy navigation, automatic content discovery, and SharePoint integration
- **Google ADK Integration:** Implementation of Google Agent Development Kit for multi-agent systems and advanced tool integration
- **GitHub Project Automation:** LLM-driven issue management with 7-mandatory-field system, automatic categorization, smart repository mapping, and review queue management
- **Development Workflow Automation:** GitHub Actions workflows for fully automatic issue-to-PR transformation (assignment → feature branch → implementation → code review → PR)
- **Self-Documenting System:** LLM automatically writes project status, meeting protocols, and issue updates back to Git wiki; closed loop of wiki reading → work execution → results documentation → Git commit with structured logging
- **Time Tracking Integration:** Commit-based work time analysis with automatic Clockify synchronization, intelligent project assignment, and BKS formatting

Tools & Technologies

- LLM Orchestration: GPT-4, Claude AI, Google Gemini (equal expertise), Model Context Protocol (MCP), Google Agent Development Kit (ADK)
- Multi-Agent: A2A Protocol, Orchestrator/Knowledge Agents, Agent Cards, JSON-RPC 2.0, SSE Streaming
- Backend: Python 3.13, FastAPI, uvx Distribution, Git Submodules
- Automation: GitHub Actions, GitHub GraphQL API, gh CLI
- Integration: SharePoint API, Clockify API, Natural Language Processing
- Development: Bash Scripting, jq, Docker, Multi-Agent Systems

Quality Engineering Lead

09/2025 – 02/2026

TÜV Süd

Quality Engineering & Technical Leadership for IDAS (Intelligent Document Analysis Solution), an enterprise platform for AI-powered document processing in medical device certification (MDR/IVDR) with AI chat integration and data pipeline automation.

Quantifiable Achievements

- **820 BDD test scenarios** across 28 feature files with 100% API coverage (66/66 endpoints)
- **88 KQL queries** verified for Azure Monitor Workbooks, 8 workbooks tested, 2 newly created
- **207 commits** in IDAS repository, 54% scenario reduction through equivalence class optimization

Key Responsibilities

- **BDD API Test Framework:** Development of comprehensive test framework with Python/Behave, self-healing authentication, HTML report generator with embedded API responses
- **E2E Test Automation:** Playwright E2E test suite for complete user journey (Setup → Upload → Transformation → Download) with 500 error handling and route mocking
- **Performance & Monitoring:** Development of Azure Monitor Workbooks (QA Live Testing Companion, Error Investigation Assistant) with KQL for end-to-end monitoring
- **Bug Analysis & Quality Intelligence:** Implementation of comprehensive bug tracking system with WIQL queries, automated dashboards, and executive PDF reporting
- **Pipeline Integration:** Test automation in Azure DevOps CI/CD pipelines with HTML report upload to Azure Test Results
- **AI-Powered Automation:** Development of automation skills for workflow optimization, bug analysis, and incident response with measurable time savings

Tools & Technologies

- Testing: Behave, Playwright, TypeScript, Python, pytest, Page Object Model, Fixtures
- Monitoring: Azure Monitor Workbooks, KQL, Application Insights, Log Analytics
- Backend: FastAPI, Python, Pydantic, SQLAlchemy, Azure Functions, Azure Service Bus
- Frontend: React, TypeScript, Vite, TanStack Router
- AI Integration: Azure OpenAI (GPT-4o), LangChain, Azure AI Search, Embeddings
- DevOps: Azure DevOps Pipelines, Git, Docker, Azure Blob Storage, Poetry

AI-driven Automated QA Environment for Energy Infrastructure

07/2024 – 01/2025

AkkuSwap Startup

QA Leadership for EU-wide Battery Swap Infrastructure: AI-driven simulation tool for battery swap station network with energy infrastructure integration

Key Responsibilities

- QA concept, design and implementation for AI-driven simulation of EU-wide infrastructure
- QA framework development for inhouse AI server infrastructure
- Proof-of-concept for automated testing of AI-driven simulations

Energy Sector Connection

- **50 Hertz Participation:** 50 Hertz (Elia Group subsidiary) participated in research project eHaul, the predecessor of AkkuSwap
- Direct energy sector experience with critical infrastructure quality requirements
- Understanding of 99.99% reliability standards for energy transmission systems

Technical Stack

- Infrastructure: Linux, Docker, Azure OpenAI
- Automation: pytest, AI code generation integration patterns
- Monitoring: Grafana, Azure Monitoring
- Energy Systems: Battery swap infrastructure, grid integration simulation

Key Achievements

- Established QA methodology for AI-driven infrastructure simulation
- Created testing framework for energy sector critical systems
- Validated proof-of-concept with measurable reliability improvements

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, Factur-X), including structural and content parsing.
- **Peppol Network Integration**: Connection to European e-invoicing network via Storecove Access Point for automated invoice receipt and dispatch with UBL/CII formats.
- **SAP ByDesign Integration**: Automatic transfer of validated invoice data to SAP ByDesign for seamless ERP integration.
- **Hexagonal Architecture**: Domain-driven design with Ports & Adapters for maximum testability and interchangeability of infrastructure components.
- **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.
- **AI Workflow Automation**: Development of AI skills for automating task tracking, issue management, and project documentation
- **Intelligent Documentation System**: Automated wiki synchronization with git commit analysis and natural language documentation generation
- **Automated Status Reporting**: AI-driven email updates with automatic project progress analysis
- **MCP & A2A Protocol Implementation**: Next-generation AI protocols for tool integration and multi-agent communication

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.
- E-Invoicing: Peppol Network, Storecove API, ZUGFeRD/Factur-X, XRechnung, UBL 2.1, CII
- ERP Integration: SAP ByDesign, Salesforce
- 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 Automation: Claude AI, Custom Skills Development, Git Analysis, Natural Language Processing
- Protocols: Model Context Protocol (MCP), Agent-to-Agent (A2A), JSON-RPC 2.0

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/bc7eae5b-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-scraper-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