

# Denis Knaack

## Software Development & Consulting

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## ABOUT

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As a Senior Software Architect with over 20 years of experience, I bridge the gap between deep backend engineering and modern frontend technologies. My portfolio spans the entire spectrum of software development: from supporting agile startups to architecting complex systems for established companies. I deliver small, medium, and large-scale projects, consistently optimized for performance and scalability. Throughout this process, I guide every step with the highest precision – from the first line of backend API to the final digital product.

## CORE TECHNOLOGIES

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### Backend

[.NET](#) [C#](#) [Node.js](#) [Python](#) [REST APIs](#) [GraphQL](#)

### Frontend

[TypeScript](#) [React](#) [Vue.js](#) [Svelte.js](#) [AngularJS](#) [Tailwind CSS](#) [Electron](#) [React Native](#)  
[HTML/CSS](#)

### Databases

[PostgreSQL](#) [SQL Server](#) [MongoDB](#) [Redis](#)

### Cloud & DevOps

[Azure](#) [AWS](#) [Docker](#) [CI/CD](#) [Cloudflare](#)

### Methods

[Agile/Scrum](#) [TDD](#) [Microservices](#) [Clean Architecture](#)

## EXPERIENCES

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### Senior Software Developer

2015 — Present

#### [KNAACK.IT](https://knaack.it)

Self-employed as Software Architect and Full-Stack Developer. Development of web applications, APIs and cloud solutions for various clients. Consulting in software architecture, DevOps and modern web technologies.

[.NET](#) [Javascript/Typescript](#) [Postgresql](#)

### CTO Co-Founder

2016 — 2021

#### [CUESIC Solutions GmbH](https://www.cuesic.com)

I led the technological strategy and architecture. Patenting a logic for automated analysis of complex media formats and music recognition for generating GEMA reports.

[.NET](#) [Typescript](#) [Electron](#)

## Software Development Professional

2012 — 2015

### Omniga GmbH & Co. KG

Development of proprietary shop systems. Implementation of new features including checkout processes, member areas, and payment provider integrations.

[.NET](#) [PHP](#) [Microsoft SQL Server](#)

## Senior Manager Software Development

2011 — 2012

### SmilingBits GmbH & Co. KG

Technical design and implementation of complex e-commerce projects. Responsible for architecture decisions and performance optimization.

[.NET](#) [PHP](#) [Microsoft SQL Server](#)

## Manager Software Development

2008 — 2011

### SmilingBits GmbH & Co. KG

Migration of legacy systems to modern .NET architectures. Developed and optimized shop systems serving hundreds of thousands of end customers.

[Cold Fusion](#) [.NET](#) [PHP](#) [Microsoft SQL Server](#)

## Manager Software Development

2003 — 2008

### GoNamic GmbH

Development of e-commerce platforms using Cold Fusion and PHP. Introduced .NET technologies to modernize the system landscape.

[Cold Fusion](#) [.NET](#) [PHP](#) [Microsoft SQL Server](#)

## IT Specialist Apprenticeship

2000 — 2003

### HIW Software Solutions

Apprenticeship as IT specialist with focus on application development. Learning the fundamentals of software development and practical application in client projects.

[Borland Delphi](#) [PHP](#) [Microsoft SQL Server](#)

## SELECTED PROJECTS

For detailed project case studies, technical deep-dives, and more information visit [knaack.it](https://knaack.it)

### Software Patent & Technological Innovation

Development and patenting of a system for automated extraction of music data from various media formats and creation of royalty lists for collective management organisations.

[Algorithm Design](#) [Audio Processing](#) [Pattern Matching](#) [Data Extraction](#)

'Details at [knaack.it/en/projects/software-patent-innovation](https://knaack.it/en/projects/software-patent-innovation)

### Fintech Foundation: API 1.0 Architecture

Building the technological foundation for a startup. High-availability REST API, PCI-DSS compliant processes, and microservices.

[C#](#) [.NET Core](#) [MS SQL](#) [REST API](#) [Azure](#)

'Details at [knaack.it/en/projects/fintech-api-architecture](https://knaack.it/en/projects/fintech-api-architecture)

## Self-Optimizing ML Pipeline (AutoML)

Development of a framework for automated feature selection, model validation, and cross-platform deployment via ONNX.

[Python](#) [LightGBM](#) [ONNX](#) [C#](#) [System.ML](#)

'Details at [knaack.it/en/projects/automl-pipeline-onnx](https://knaack.it/en/projects/automl-pipeline-onnx)

## Modern Web & GraphQL Consulting

Architecture consulting for replacing monolithic REST structures with scalable GraphQL federations.

[GraphQL](#) [Node.js](#) [TypeScript](#) [React](#) [PostgreSQL](#) [Apollo](#)

'Details at [knaack.it/en/projects/graphql-modern-web](https://knaack.it/en/projects/graphql-modern-web)

## Desktop Applications with JavaScript

Cross-platform desktop applications with Electron and TypeScript.

[Electron](#) [TypeScript](#) [Node.js](#) [React](#) [C#](#) [IPC](#)

'Details at [knaack.it/en/projects/desktop-system-tools](https://knaack.it/en/projects/desktop-system-tools)

## COVID Scanner & QR Processing

Development of a high-performance mobile app for offline validation of digital certificates focusing on data privacy.

[React Native](#) [Expo](#) [TypeScript](#) [Cryptography](#)

'Details at [knaack.it/en/projects/covid-scanner-app](https://knaack.it/en/projects/covid-scanner-app)

## CI/CD & DevOps Automation

Transformation of manual release processes into fully automated pipelines using Docker and Kubernetes.

[GitHub Actions](#) [GitLab CI](#) [Docker](#) [Kubernetes](#)

'Details at [knaack.it/en/projects/devops-cicd-automation](https://knaack.it/en/projects/devops-cicd-automation)

## Portfolio Website [knaack.it](https://knaack.it)

Development of a high-performance portfolio site using a modern web stack, optimized for Edge deployment.

[Astro 5](#) [TypeScript](#) [Tailwind CSS](#) [Cloudflare](#)

'Details at [knaack.it/en/projects/portfolio-knaack-it](https://knaack.it/en/projects/portfolio-knaack-it)

## Strategic Migration: ColdFusion to .NET

Initiation and technical leadership of migrating a monolithic ColdFusion landscape to a modern .NET ecosystem.

[C#](#) [.NET](#) [ColdFusion](#) [SQL Server](#)

'Details at [knaack.it/en/projects/coldfusion-dotnet-migration](https://knaack.it/en/projects/coldfusion-dotnet-migration)

## Social Media App Development

Native Android development of a successful social media platform within an agile freelance team.

[Java](#) [Android SDK](#) [Android Studio](#) [Mobile First](#)

'Details at [knaack.it/en/projects/social-media-app-android](https://knaack.it/en/projects/social-media-app-android)

## Fintech Security & Visa Compliance

Implementation of critical security updates and new Visa policies for a fintech platform.

[C#](#) [.NET](#) [Payment Gateways](#)

'Details at [knaack.it/en/projects/fintech-security-visa](https://knaack.it/en/projects/fintech-security-visa)

## Automated Web Scraping Tools

Development of specialized data mining software for automated data extraction from websites.

[C#](#) [WinForms](#) [Regex](#) [HTML Parsing](#) [HTTP Automation](#)

'Details at [knaack.it/en/projects/automated-web-scraping](https://knaack.it/en/projects/automated-web-scraping)

## Automated Settlement Email Dispatch

Development of an automated system for time-critical dispatch of settlement emails in the fintech sector.

[C#](#) [.NET](#) [SMTP](#) [MS SQL](#) [Azure](#)

'Details at [knaack.it/en/projects/fintech-settlement-emails](https://knaack.it/en/projects/fintech-settlement-emails)

## Email Tracking System

Implementation and documentation of a comprehensive email tracking system for marketing and transactional emails.

[C#](#) [.NET](#) [REST API](#) [MS SQL](#) [JavaScript](#)

'Details at [knaack.it/en/projects/email-tracking-system](https://knaack.it/en/projects/email-tracking-system)

## Technical Audit & Legal Disclosure

Technical representation of the company in a complex legal dispute, including code disclosure and expert witness communication.

[Tech Consulting](#) [Code Analysis](#) [Forensics](#) [Communication](#)

'Details at [knaack.it/en/projects/technical-audit-legal](https://knaack.it/en/projects/technical-audit-legal)

## NNTP Client for Windows

Development of a modern Usenet newsreader with WPF for Windows platforms.

[C#](#) [WPF](#) [XAML](#) [.NET Framework](#) [NNTP](#)

'Details at [knaack.it/en/projects/nntp-client-wpf](https://knaack.it/en/projects/nntp-client-wpf)

## Plugin Architecture in C#

Design and implementation of a flexible plugin architecture for extensible .NET applications.

[C#](#) [.NET](#) [Reflection](#) [MEF](#) [Dependency Injection](#)

'Details at [knaack.it/en/projects/plugin-architecture-csharp](https://knaack.it/en/projects/plugin-architecture-csharp)

## Secure Authentication with Hash & Salt

Implementation of a secure authentication system with modern hashing algorithms for web applications.

[C#](#) [.NET](#) [ASP.NET](#) [Cryptography](#) [MS SQL](#)

'Details at [knaack.it/en/projects/secure-authentication](https://knaack.it/en/projects/secure-authentication)

## Post-Hack Recovery & Operations

Secure relaunch of a web application with tens of thousands of users after a hacker attack.

[Operations](#) [Database Management](#) [Payment Systems](#) [Incident Response](#)

'Details at [knaack.it/en/projects/post-hack-recovery](https://knaack.it/en/projects/post-hack-recovery)

# CONTACT

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Have a question or want to work together? Feel free to reach out! I'll get back to you as soon as possible.

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**Website**

[knaack.it](https://knaack.it)

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