01 / 19 — SOFTWARE VETERAN · MEDALS AND SCARS EARNED IN THE TRENCHES, NOT AT HEADQUARTERS

Rossen Genchev

Being early looks exactly like being wrong, for about four years. **I have been early thirteen times**, from search engines in 1996 to LLM agents in 2020. Below: the thirteen, dated against the day the industry caught up, and what each one became.

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02 / 19 — TWO RECEIPTS

Before the argument, the receipts.

$1B

Dynamo Software, valued in 2021.

Eleven years there, 2002–2013, three of them as Chief Software Architect.

€1M

Practicedent, sold to CURADEN AG.

First company, built and sold within two years.

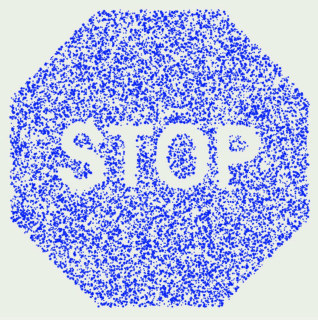
03 / 19 — WHAT I AM FOR

Four things.

01	**System design and software architecture**
02	**Technical leadership and managing engineering teams**
03	**Distributed software systems**
04	**LLM agent integrations**

04 / 19 — THE REFUSAL

Ignore this CV if

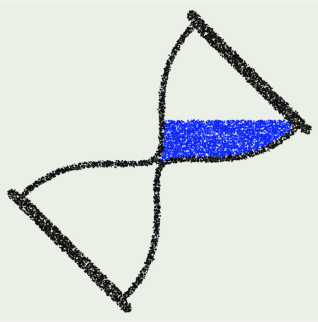


01	the phrase you hear most in this building is “that’s hard”, not “that’s interesting”;
02	people here grow by who they had lunch with, not by what they shipped;
03	you are still waiting for AI to prove itself;
04	“let’s wait and see” has ever won an argument here;
05	you need someone else to have named a thing before you will fund it.

Everyone else, read on.

05 / 19 — THE CLAIM

Being early is indistinguishable from being wrong.

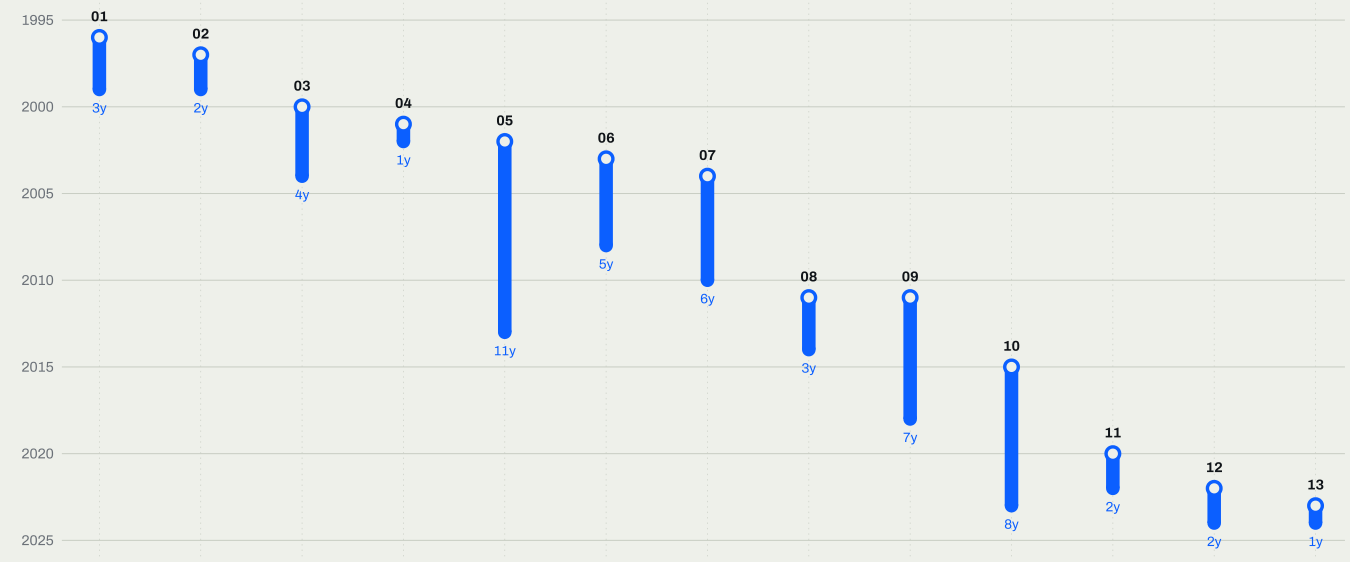


For about four years. Then the thing gets a name and everyone agrees it was obvious. I have lived inside that gap thirteen times. The receipts are above; the rest is measured below.

06 / 19 — PLATE I · WHAT AND WHEN

Thirteen systems, from built to named.

The gap is closing. Not because I slowed down: **the industry got faster**.



○ the year I built it ● the year it got a name

01 Inverted index, compressed posting lists, proximity ranking
on a 386 with 4 MB, Windows 3.1
1996 → Lucene, 1999

02 Cooperative concurrency: every query a state machine stepped on idle
no OS threads available
1997 → State Threads, 1999

03 Radio and TV archives digitised to MP3, a portable player reaching them
BrandCom, later acquired by a US TV network
2000 → podcasting, 2004

04 Unit tests, derived from watching QA repeat what code could check
not read anywhere
2001 → TDD, 2002

05 HTML as the user interface of a desktop application
first pilot, WebMessenger
2002 → Electron, 2013

06 Attribute-annotated objects bound to database operations and UI controls
Dynamo, .NET
2003 → Entity Framework, 2008

07 UI generated from the schema; self-arranging layout reshaped by drag and drop
a grid renderer for WinForms
2004 → responsive design, 2010

08 A backend made only of plugins with manifests and a global event bus
Dynamo 6
2011 → event-driven microservices, 2014

09 EDL: one declarative language for schema, process and screens
the foundation of Dynamo 6
2011 → low-code platforms, 2018

10 Shopping by sentence, not by keyword
HashStyle, on the language models of 2015
2015 → LLM shopping assistants, 2023

11 Bet the company on language models, days after GPT-3
the client I wrote to was skeptical
2020 → ChatGPT, 2022

12 The model reads, generated code verifies, the mismatch goes back as a prompt
financial tables with merged cells
~2022 → verifier loops, 2024

13 An LLM-facing layer in front of every data source; forms assembled inside the chat
prototype rejected as too unfamiliar
2023 → MCP, 2024

07 / 19 — CHAPTER I · 1994 – 1998

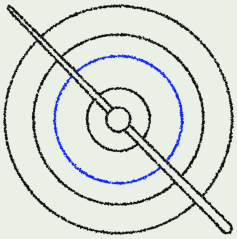
The self-taught

Specialised school for electronics and computing · Sofia University, BSc Mathematics, 1995–1998 · Ciela, senior programmer, 1996–1997

01	At 17, learned C++ **from a Russian-language book without knowing Russian**. Wrote a DOS program that plots any typed function: expression translated to reverse Polish notation, numeric roots, differentiation, integration, a windowed interface. No internet.
02	At 18, hired straight in as senior programmer at Ciela, a legal information system. Requirement: **full-text search on a 386 with 4 MB of RAM**, under Windows 3.1, serving several searches at once on an OS without threads.
03	**Built it in six months**: dictionary stemming, noise removal, inverted index, posting lists sorted and compressed in blocks of 10,000, merge-style intersection that never fit in memory, proximity scoring on the survivors. Concurrency by hand: each search a state machine advanced one step per idle message.

08 / 19 — CHAPTER II · 1999 – 2001

The reluctant commander



BrandCom, Israeli startup · programmer, then CTO at 21

01	First web work. Built pizza911, **one of the first online shops in New York**, in C++ CGI.
02	Digitised and archived radio and television audio using MP3 while it was still an exotic format; prototyped a portable player that reached the archives. The archiving product succeeded; the company was **later acquired by an American TV network**.
03	While the founder was abroad, the team was stalling. Brought in process and discipline with no title; people followed. On his return he made me CTO. **Ran about 25 people across 10 projects** for two years, then left: the pressure was more than I wanted to carry.

> **Extinct branch:** the portable archive player. Three years later the world called the idea podcasting.

09 / 19 — CHAPTER III · 2001 – 2002

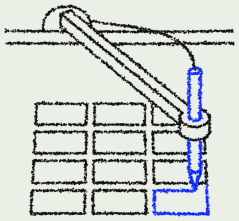
The heretic

WebMessenger, senior programmer · Microsoft .NET Beta 1 programme

01	**Introduced unit testing to the company**. I had not read about it; I had watched QA spend days on checks a program could run in seconds.
02	Ran the first pilot using **HTML as the front end of a desktop application**, for effects that were painful in native controls.
03	Member of Microsoft's .NET Beta 1 group **a year and a half before release**, feeding back on C#/COM interop and on memory owned by unmanaged code. Argued that C# or Java should replace C++ for business logic. Management declined. I left.

10 / 19 — CHAPTER IV · 2002 – 2013

The architect

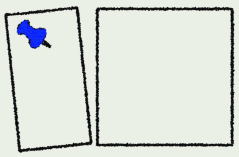


NetAge Solutions, later Dynamo Software · senior developer, team lead, then Chief Software Architect for three years

01	Joined to pilot C#. Delivered TTFSE, an EU-sponsored logistics, route-planning and customs-documents system, **on time: first web services, first interactive route map**.
02	Moved to Dynamo, a CRM for investment bankers that lived entirely inside Microsoft Exchange, with Outlook as the client and the Exchange store as a document database. Filtering, aggregation and relations were thousands of lines of if/else. Replaced them with an XML metadata layer: **schema changes went from slow and fragile to routine**.
03	For the full .NET rewrite, built an attribute-based binding engine mapping annotated objects and controls to database operations, then removed hand-built WinForms screens altogether: **the UI is generated from the business schema**, laid out by a responsive engine with an HTML-table model inside, and reshaped by users with drag and drop. The product became more flexible than its competitors. **That work earned the title.**
04	For Dynamo 6 (2013): designed **EDL, the Entity Definition Language**, covering business-object-to-schema transformation, process descriptions and control descriptions, and a backend built entirely from plugins with manifests and a global event bus.
05	Left in 2013 to found my first company. Dynamo went on to become a category leader: Francisco Partners majority stake in 2017, Blackstone growth investment in 2021 at **a reported valuation approaching $1B, over 1,000 clients today**. Dynamo is now a BioSeek client.

11 / 19 — CHAPTER V · 2013 – 2018

The founder, twice



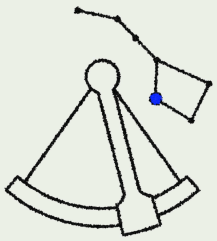
MediCloud, co-founder, 2013–2015 · HashStyle, co-founder, 2015–2018

01	MediCloud started from a personal collision with healthcare: **a patient-owned health record**, readable and interactive rather than hundreds of pages. Too large for the team. Pivoted to dental practices, where we had an investor.
02	Built Practicedent, a cloud CRM/ERP for dental clinics in Switzerland and Germany, in more than ten languages: a “mini Dynamo” on the MEAN stack while every part of it was brand new, with JSON flowing unchanged from browser to database. **About 90% less code than the original**. Acquired by our investor CURADEN AG in 2015; the founders **exited for around €1M after two years**.
03	HashStyle: an e-commerce platform that **understood sentences, not keywords**, on the primitive language models of 2015. Came within reach of an acquisition by Viber. The deal fell through and the company nearly went under.

> **Extinct branches:** the patient-owned record, and HashStyle itself. Descendants: the one-language, one-representation stack I have used since, and the semantic search that became BioSeek.

12 / 19 — CHAPTER VI · 2018 – TODAY

The cartographer



BioSeek JSC, CEO and co-founder · bioseek.eu, aerosaas.ai

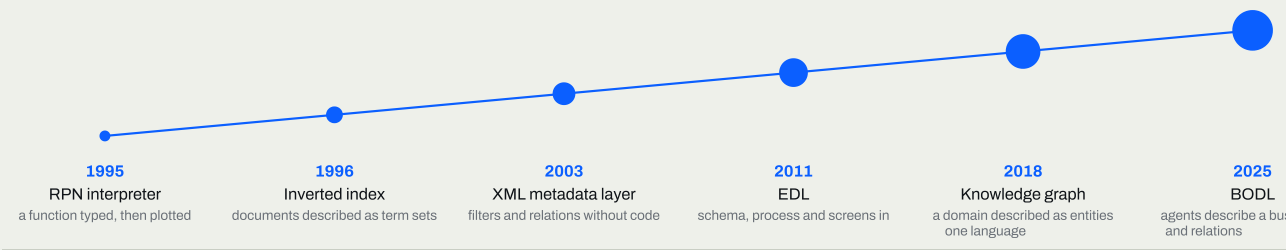
01	A biotech client asked for a better search engine. What the text actually contained was **a knowledge graph waiting to be extracted**. BioSeek was founded to build it.
02	Wrote an entity-recognition algorithm that finds **around one million genes, compounds, organisms and drugs in a page of text in under a millisecond**, with statistics and careful memory layout rather than machine learning. Licensed to Dynamo Software, where it links customer databases to document corpora for 42 clients, including Lockheed Martin and the University of Pennsylvania.
03	Moved the company to **language models in 2020, days after GPT-3**. Receipt recognition for a fuel company at **99% accuracy** with OCR plus GPT-3.5, before vision models existed. A CV platform for a recruiter: PDFs to strict JSON under a fixed ontology, semantic search with reranking, and matching that splits each CV and job ad into semantic cores, scores each with the model, and lets the model run the conversation until the gaps are filled.
04	For Dynamo: natural language translated into their filtering meta-language, **saving experienced users 10–15 minutes a query**, with layer-by-layer schema extraction because the context window could not hold the schema; extraction of financial data from Excel and PDF with generated Python checking the arithmetic and feeding mismatches back; and a prototype where every data source sits behind an LLM-facing layer and every operation runs from chat, with forms assembled on the fly. **Rejected as too unfamiliar, a year before MCP.**
05	A phone-line pipeline (noise removal, specialised speech-to-text, an adapted model correcting transcription errors) reaching **near-perfect success at 5–8 seconds of latency**; a US legal knowledge graph across federal and state law, amendments and court audio with speaker identification, queried by **agents forbidden to use their own legal memory**.
06	AERO: agents interview a client and **build the complete operating system of the business**, CRM to ERP to documents. Not by generating and testing millions of lines of code, but by writing BODL, the Business Object Definition Language, EDL's direct successor, which an engine executes.
07	For an e-commerce company (under NDA): an agentic commerce platform. **Sixteen coordinated agents take a shop from a structured interview to a running business**, from migration to merchandising, retention and a daily briefing to the merchant; the store engine is built for **Shopify-class load and scale**. Behind it a back-office ERP, written in BODL and run by AERO, close to a full counterpart of the large enterprise suites.

> **Paused branch:** the full public-biology graph. Converting hundreds of millions of pages costs millions in inference even at the cheapest models. The engine exists; the fuel does not, yet.

13 / 19 — ONE IDEA, SIX TIMES

The same move, one level higher each time.

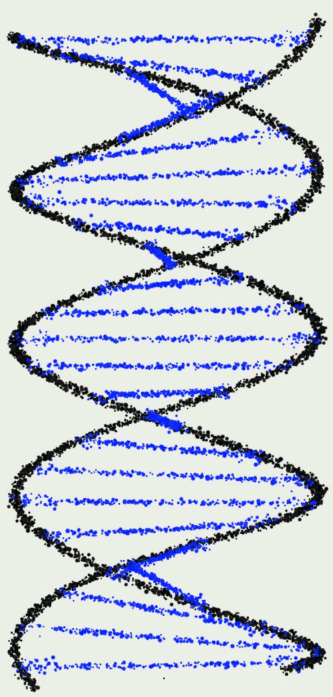
Every period of my career is the same move, one level higher: **describe the thing, then let an engine execute the description**. The tool in my hands evolved. The idea did not.



14 / 19 — EVERYTHING, IN ORDER

Twenty-four systems.

A small share of what I have shipped: the ones kept here are the ones where the hard part was the engineering.



1994	DOS math function plotter C++
1996	Ciela full-text search C++, Delphi, MFC
1999	pizza911 online shop C++ CGI
2000	Radio/TV MP3 archiving, portable player C, C++
2001	WebMessenger C++, MFC, DirectX, ATL
2002	TTFSE logistics and customs C++, VB, C#/.NET, MS SQL, HTML/JS
2003	Dynamo on Exchange, XML metadata layer C/C++, COM, VB
2003	Dynamo .NET binding engine C#, COM, C++
2004	Dynamo schema-generated UI and layout engine C#
2011	Dynamo 6: EDL and plugin backend C#, C++
2013	MediCloud / Practicedent MEAN
2015	HashStyle semantic e-commerce search .NET
2018	BioSeek entity-recognition algorithm .NET, Go
2018	BioSeek biotech knowledge graph .NET, JS, Go, Neo4j, MongoDB
2021	Dizelor receipt recognition MEAN, LLM
2022	Arena CV ingestion platform MEAN, LLM
2022	Arena candidate–job matching MEAN, LLM
2022	Dynamo text-to-grid C#, Go, Python, LangChain
2022	Dynamo Excel/PDF extraction Python, LangChain, LangGraph
2023	Dynamo LLM-native layer and chat frontend Python, LangChain, LangGraph
2024	LLM on a phone line Python, LangGraph, MEAN, Elasticsearch
2024	US legal knowledge graph Python, LangGraph, PostgreSQL, D3.js
2025	AERO / BODL Python, LangGraph, MEAN, React, D3.js
2026	Agentic e-commerce platform and back-office ERP (under NDA) Python, LangGraph, BODL / AERO, MEAN

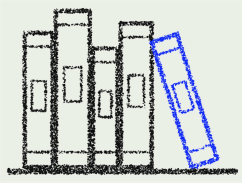
15 / 19 — EDUCATION

1995–1998	Sofia University BSc Mathematics
to 1995	Specialised secondary school for electronics and computing machines Bulgaria

16 / 19 — PUBLICATIONS

2023	Dreaming in Code: Envisioning the Perfect Programming Language (DreamLang) rossen.page/writing/dreaming-in-code
2026	Metaprogramming: An elegant weapon for a more civilized age rossen.page/writing/metaprogramming
2026	The AI Apocalypse Won't Come From Superintelligence — It Will Come From Layoffs rossen.page/writing/ai-apocalypse-layoffs
2026	From Neuron to Agent: What We Learned When We Tried to Speak to Machines rossen.page/writing/neuron-to-agent
2026	Mathematics Is the Most Beautiful Thing in the World. School Made Sure You'd Never Find Out. rossen.page/writing/mathematics-bg
2023	Erlang: The Curiously Strong Language Every Developer Should Learn rossen.page/writing/erlang
2023	Redis: From Simple Key-Value Store to One-Stop Database Solution rossen.page/writing/redis
2023	Metamorphosis to Greatness: How Startups Transformed Through Pivoting rossen.page/writing/pivoting
2025	The Tyranny of Bureaucracy and the Heroic Individual rossen.page/writing/bureaucracy
2023	Unearthing the Hidden Genius of ChatGPT and Its Ilk: A Lobster's Guide rossen.page/writing/lobsters-guide
2023	Adopt GPT, or Be History! rossen.page/writing/adopt-gpt
2023	The Hitchhiker's Guide to Artificial Intelligence rossen.page/writing/hitchhikers-guide-ai
2023	Leadership Lessons for Business from The Art of War rossen.page/writing/art-of-war
2023	The Quantum Computing Tsunami: A Looming Threat to Cryptocurrency Security rossen.page/writing/quantum-tsunami

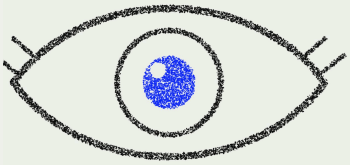
17 / 19 — FIVE BOOKS THAT SHAPED THE WORK



01	The Nature of Software Development Ron Jeffries
02	Enterprise Integration Patterns Hohpe and Woolf
03	Lean from the Trenches Henrik Kniberg
04	Seven Concurrency Models in Seven Weeks Paul Butcher
05	Learn You Some Erlang for Great Good! Fred Hébert

18 / 19 — WHERE TO LOOK

See it working.



Two products live today, and four recordings of systems from the index, running. Each recording has its own page, with what it shows and a transcript.

bioseek.eu

BioSeek, the biotechnology re:search engine.

The questions a drug programme turns on — which targets hold up, what is patented and by whom, where the safety signals are, who else is in the race — as one graph the agents reason across, answered with the sources attached.

aerosaas.ai

AERO, agents that build the operating system of a business.

Agents interview a client and write BODL, the Business Object Definition Language; an engine executes it. CRM to ERP to documents, without generating a line of code.

2019	BioSeek, the biotechnology re:search engine	One minute from 2019: the questions a keyword search cannot answer about a disease, and a search engine that answers them with the sources attached. rossen.page/work/bioseek · YouTube · 1:03
2025	Contract analysis: clause risk, scored and sourced	A service agreement uploaded, read and split into clauses; each clause analysed for risk, given revised wording, and linked to the case law and regulation it rests on. rossen.page/work/contract-analysis · Loom · 3:02
2025	Public procurement: irregularities and live prices	A public tender read by agents: the specifications quietly written around one supplier flagged, and every line item priced against market alternatives the system finds and cites. rossen.page/work/public-procurement · Loom · 4:39
2017	Semantica: search for fashion, by sentence (HashStyle)	A shop searched by asking in plain language, on the language models of 2015. The engine underneath became BioSeek. rossen.page/work/semantic-search · Vimeo · 1:44

19 / 19 — CONTACT ME IF

Being early has a price, and I have paid it more than once: a language proposal declined, a chat-first interface declined, a company left before the exit, a deal that did not close. **I would rather keep paying it than arrive on time with everyone else.**

You are building something that does not have a name yet.

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