



SURF THE AI WAVE

NEW ROLES.
BIGGER POSSIBILITIES.
A BRIGHTER FUTURE.

 ADAPT

 LEARN

 GROW

 THRIVE

*Same
Ocean.
New
Horizons.*

A PRACTICAL AND INSPIRING GUIDE
TO YOUR NEXT CHAPTER IN AN AI-POWERED WORLD

JOHN DAVID MARX

— JOHNDAVIDMARX.COM —



SURF THE AI WAVE

Thirteen Careers Where American Talent Can Ride
the Biggest Opportunity of Our Time

JOHN DAVID MARX

SEPTEMBER 2026

TURN DISRUPTION INTO OPPORTUNITY.

The headlines focus on the jobs AI will change. This book is about the work AI will create — and the thirteen doors that are open right now to anyone willing to walk through one.

Every figure inside is cited to a published source: the World Economic Forum, the U.S. Bureau of Labor Statistics, Gartner, Google's DORA research, the IAPP, and Robert Half's 2026 salary data.

Surf the AI Wave

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Version 1.1.1

*“You can’t stop the waves,
but you can learn to surf.”*

JON KABAT-ZINN

*For everyone who has been told the wave is coming for
their job — and decided to paddle out anyway.*

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FOREWORD

Because You Cannot Surf Backwards

Forty-four years in this business, and the only move that has ever worked is the same one the ocean asks for: face the wave and go.

- A machine in the trunk of a car
- A night that changed everything
- Eighty-four squirrels, and counting

The Machine in the Trunk



Only if you promise not to take it apart.

I have been in information technology for almost forty-four years. I landed in this profession because my father sold Burroughs mainframes and equipment.

He came home one day worried. He had to demo a programmable finance calculator and he did not know how to program it yet. When he showed me the huge white and blue machine in the trunk of his car, I asked him if we could set it up. He said, “Only if you promise not to take it apart.”

I had form. I was guilty of taking some of his earlier demo units apart, just to see if I could work out how they ran.

The Night That Changed Everything

That night changed my life. I read the manual and was disappointed by how little of it was written for a novice. And I read about things I knew nothing about: amortization schedules, simple interest calculations, budgeting and forecasts, diminishing returns.

The unknown did not discourage me. It challenged me. It excited me. I was bored at school, and my C average showed exactly how much academia was asking of me.

So I started programming that very night and did not sleep. The next morning I showed my dad how, with a few button presses, he could demonstrate the ten programs I had written for the machine. He took notes on a yellow ruled pad. His demo went well.

When he told the client — the president of the Fort Worth Employees Credit Union — how he had learned to program it, she asked if she could meet me.

Teller, Briefly

It was not until after I had dropped out of high school that I got my first real computer job. I had an operator job at Tandy on a DEC 11/780, but the Burroughs story is the better one — and Tandy fired me after I dropped out anyway. By then I had written games on a TRS-80 Model I, a Commodore VIC-20 and a Commodore 64, and had tried and failed to learn assembler. I stuck to BASIC.

When I finally met the head of the credit union, she offered me a job as an operator on their Burroughs mainframe. On my first day, they explained that the systems manager had already found an operator, so they had hired me as a teller instead.

I was bored by every position they had, and they kept moving me around. I ended up in the office selling certificates of deposit. Until the day the arresting officer from the Fort Worth Police Department saw me, and told the president I should not be working there.

The Homecoming Float

I had been arrested with my fraternity brothers from Delta Tau Delta at Texas Christian University. We had taken “scrap” wood from a construction site to build our homecoming float.

Let us just say that some of the wood we loaded up did not really qualify for the adjective “scrap,” and when we were arrested, we were put in jail. Fort Worth still had some of the old guard in law enforcement then, and I have always thought that officer resented us for being rich kids at TCU.

But I digress.

Lesson

The wave does not much care what you meant to do. It only cares which way you are pointing when it arrives.

SOAP



The B1900 at Cook Children's — and the night shift that came with it.

I went to work for Cook Children's Hospital as a night operator on a B-1900. I got bored, fell asleep one night, did not finish the night jobs, and they opened the online terminals late the next day. They did not fire me. I asked if I could program in COBOL at night to keep myself awake, and the director saw no harm in it.

So I wrote a job control language for the mainframe. Burroughs did not really have one at the time. I used ZIP commands on the MCP to run jobs automatically, track their execution and print a report. But it was not fully automated, because no ZIP command could read the labels on the disk packs and tape drives.

I drove down to the Burroughs offices in Irving, Texas, and bought the MCP programming manual.

Finding the Way Around

I quickly realized that the underpinning of the ZIP commands was a proprietary library Burroughs did not make available to end users. That did not derail me. I found a way to read the output of an OL DPA command, ran the response through a nested IF statement in COBOL, and had it prompt the operator at the console when the wrong tape was on drive A or B.

This mattered. The removable disk packs held 200 MB of the previous day's work, and you had to purge the destination drive to back up the production drive to it. I will not dwell on the mistake a few weeks earlier that had fifteen hospital employees rekeying a day's work, after I typed PG DPA when I should have typed PG DPB. The packs rotated every day.

But I digress again. The system came to be called SOAP — System Operators Automation Programs — and my successor kept expanding it long after I left.

Philosophy and Religion

The point I am making is that I found early on that computer intelligence could help make me successful. Realising that while I was still studying shaped everything about how I planned a career.

Remind me to tell you how I failed COBOL in my first computer science class and ended up majoring in philosophy and religion. But I digress. Yes, I have ADD, and yes, I am quite gregarious.

Before I graduated from TCU I had automated the campus ministries office for the Rev. John Butler with a multi-user Tandy Model 16 running Xenix, a terminal in every office. John Roach, the CEO of Tandy, was chancellor of TCU at the time, so that sale was an easy one.

The PC Company

I had also built a job cost program for my brother-in-law, Mike Parish, a spec home builder who had bought a Tandy Model 1000. When Mike learned I needed money for school, he took me down to the Tandy Computer Center, met the branch manager, and talked him into looking at it. We entered invoices, categorized expenses by job code for each house, and printed a variance report showing actual against budget on sixteen-inch greenbar.

Within two weeks we were running a Saturday morning seminar for prospects the branch had invited. I did my first dog and pony show with a projector and handed every attendee a copy of the report. We started selling the program to Tandy customers for \$1,500. Just the software. At nineteen, I thought I was rich.

Then a customer asked whether I could write a general ledger. I had no idea what one was. I said yes anyway, went home, and did what I have always done with software: I joked that I had lied to the customer, then ran back to the office to make my lies true.

Real Jobs

My first company was formed before I graduated, and it was called the PC Company. We sold that software twenty-four times to twenty-four home builders, \$5,000 a module, an integrated accounting system with job cost, general ledger, accounts payable, accounts receivable and payroll. Twenty-four clients, and an hourly rate for custom work on top.

The entrepreneurial pursuits never really stopped. The Open Systems Group, founded in 1989, was probably my most successful company. But I had a wife and a family, and there were stretches when self-employment would not pay the bills, and I had to take real jobs.

I did well at those too. I spent six years at Red Hat and made seven figures on a W-2 one year, working for a great leader in Scott Sajer.

But This Is Not About Me

It is about you. What this book represents is an opportunity. Not easy money — the work is hard and it is stressful.

But plenty of work is hard and stressful. When I worked with my brother-in-law, I roofed houses through Texas summers. In the winters, through high school and early college, I washed dishes and bussed tables at the Edelweiss Restaurant for Bernd Schnerzinger. I eventually cooked there and trained as a chef.

I always came back to software. I have never been happier than when I have climbed the proverbial mountain of making a program work. I suppose that is why I am writing this e-book today.

What Bezos Taught Me

I have always been impressed by Jeff Bezos's journey. I do not especially appreciate the billionaire type he has become. But I admire the way he pushed through the dot-com bubble bursting and stuck with it when so many others did not.

That same tenacity is what inspires me now. Learning a whole new paradigm at sixty-four is difficult. I also believe it is worth doing.

Tenacity

Plenty of people had the idea. The one who mattered was the one still standing when the tide went out.

There's Another Opportunity



The squirrel in question.

I am having so much fun working for myself, and not letting clients or employers rule my day, that my creative energies — and even my ADD — are prospering. The Webspinner Foundation has eighty-four projects under way as I write this.

And I get to trade the phrase “there’s a squirrel” for “there’s another opportunity.”

Who knew work could be this much fun?

FOREWORD

Not Giving Up. Giving In.

I am sixty-four. My most recent job ended badly, and I am once again self-employed. But this time my three children no longer live at home. My investments in real estate bring rental income. Social Security arrives every month.

Now I do what I do because I want to, not because I have to. Computer work has proven, for me, to be both fun and prosperous.

It is not about giving up. It is about giving in.

I pray this book blesses all who read it.

John David Marx

The Wave Is Here



Every great shift makes two kinds of people. Paddlers, and the knocked-over.

Every great technology shift brings two kinds of people: those who get knocked over by the wave, and those who paddle out and ride it. Artificial intelligence is the biggest wave of our lifetimes, and there is room on it for millions of Americans.

The headlines focus on the jobs AI will change. The bigger story is the work AI will create.

+78M

Net new jobs worldwide by 2030 — 170 million created against 92 million displaced, across more than 1,000 major employers surveyed by the World Economic Forum.¹

Four Ways to Ride It

The fastest-growing roles on the World Economic Forum's list are driven by technology: big data specialists, AI and machine learning specialists, software developers, and security specialists.² Here at home, the U.S. Bureau of Labor Statistics expects AI adoption to drive strong job growth in computer and mathematical occupations over the next decade.³

AI isn't creating one new job. It is remaking the entire technology profession, from the architects who design systems, to the engineers who build and run them, to the electricians who power the buildings they live in.



The Builders

who design and create AI systems



The Operators

who run the platforms AI depends on, now with AI as a partner



The Guardians

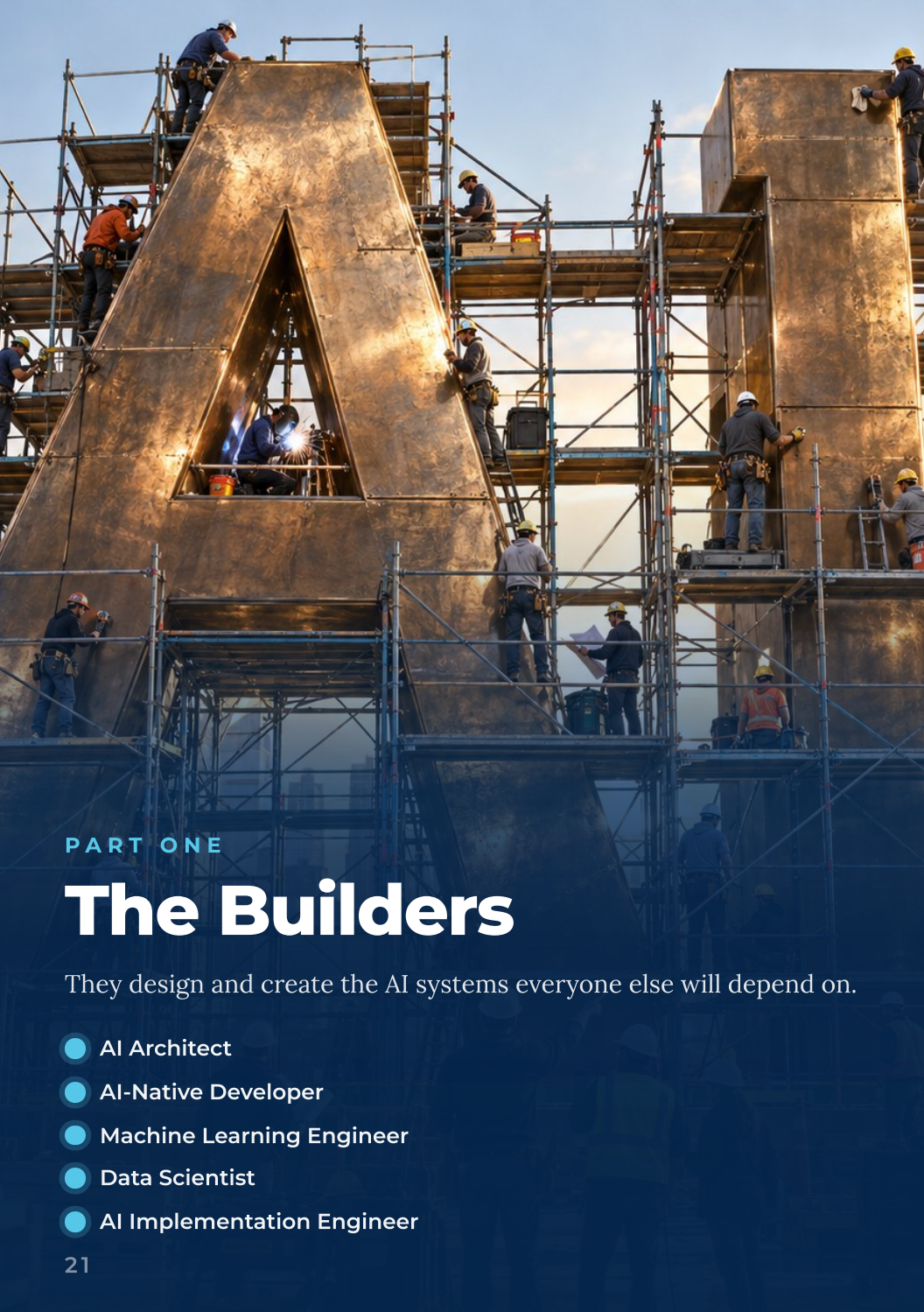
who keep AI secure and trustworthy



The Infrastructure Crew

who build and maintain the physical backbone

Some paths take a degree. Some take an apprenticeship where you get paid while you learn. All of them require the same first step: start.



PART ONE

The Builders

They design and create the AI systems everyone else will depend on.

- AI Architect
- AI-Native Developer
- Machine Learning Engineer
- Data Scientist
- AI Implementation Engineer

AI Architect



The big calls get made before the first line of code.

THE WORK

AI architects design the whole system before anyone writes a line of code. They decide which models to use, how data flows in and out, how AI agents connect to a company's existing software, and how to keep it all secure, reliable, and affordable. They make the big calls: build or buy, hosted or self-hosted, one model or many.

THE PATH

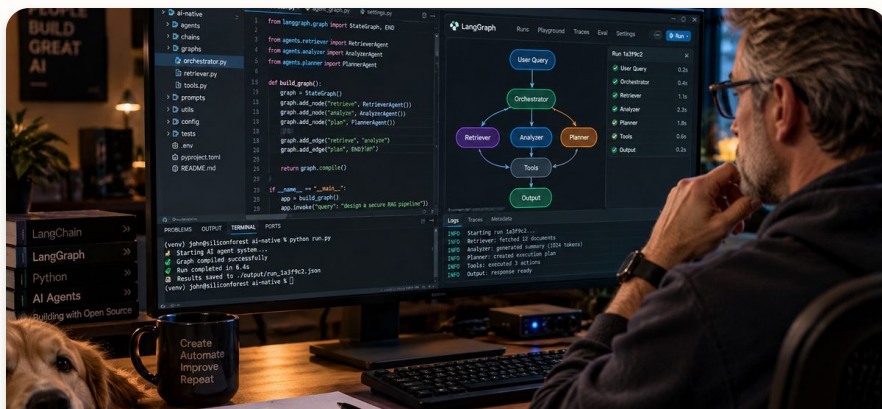
This is typically a senior role. Solution architects, enterprise architects, and experienced engineers are natural candidates, because the job rewards deep knowledge of how real systems fit together.



Cloud architect certifications from AWS, Google Cloud, and Microsoft form the foundation, with AI-specific credentials such as Microsoft's Azure AI Engineer Associate on top.⁴

TYPICAL PAY **\$142,750 – \$196,750**

AI-Native Developer



The assistant writes. The developer decides.

THE WORK

Software development is being rebuilt around AI. An AI-native developer works with coding assistants and agents as everyday partners: generating code, refactoring old systems, writing tests, and producing documentation, then reviewing, correcting, and integrating what the AI produces. They also build AI features into products, so the software itself gets smarter.

90%

of technology professionals now use AI at work, up 14% in a year⁵

2 hours

median time spent working with AI tools each day

Google's 2025 DORA research, a survey of nearly 5,000 technology professionals.⁵

Why Humans Matter More

...AI-Native Developer, continued

THE CATCH

The same DORA survey found that only 24% of respondents actually trust what these tools produce.⁷ Gartner warns that by 2027, a quarter of software defects reaching production will come from a lack of human oversight of AI-generated code.⁸

THE PATH

Keep your fundamentals strong: programming, system design, testing, and security. Then learn to work with AI coding tools daily, build small projects with them, and show employers what you can ship.

24%

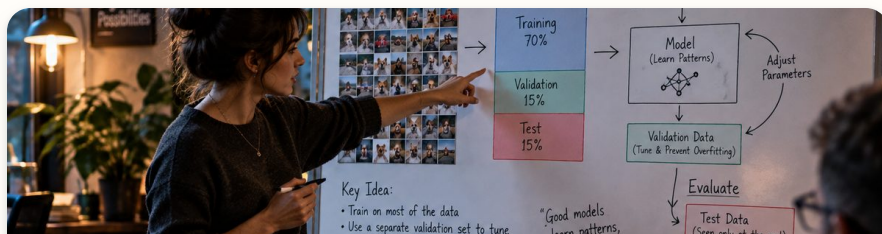
of respondents trust what AI tools produce. The developer who can direct AI, judge its output, and catch its mistakes is the developer every company needs.

90%

of enterprise software engineers will use AI code assistants by 2028, up from under 14% in early 2024⁶

TYPICAL PAY **\$109,250 – \$175,500**

Machine Learning Engineer



Data scientists write the recipe. ML engineers run the kitchen.

THE WORK

They take AI models from experiment to production: preparing training data, deploying models, automating pipelines, monitoring performance, and keeping systems secure.

THE PATH

A background in software development, DevOps, or data engineering is the usual springboard.

70%

of North American IT leaders say AI and machine learning specialist roles are the hardest to fill.⁹



The AWS Certified Machine Learning Engineer – Associate targets about a year of experience, but AWS offers prep plans for those starting without ML experience. 130 minutes, 65 questions, \$150, valid three years.¹⁰

TYPICAL PAY **\$134,000 – \$193,250**

Data Scientist



Turning raw information into decisions.

THE WORK

Data scientists analyze large datasets, build predictive models, explain what the numbers mean, and prepare the data AI systems learn from.

THE PATH

Most entrants hold at least a bachelor's degree in math, statistics, computer science, or a related field, and some employers prefer a graduate degree. A portfolio of real projects in Python and SQL speaks loudly.¹¹

33.5%

projected growth, 2024–34 —
fourth-fastest in the country³

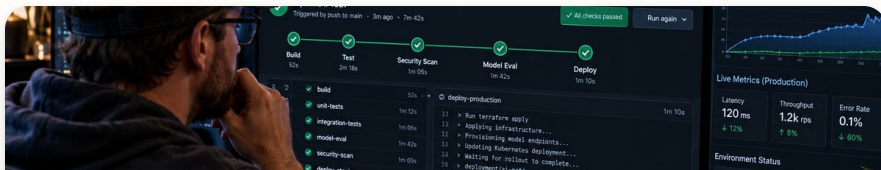
23,400

openings a year

TYPICAL PAY **\$121,750 – \$182,500**

AI Implementation Engineer

Also called a Forward Deployed Engineer



The bridge between an impressive demo and a result a business can

THE WORK

These engineers embed with a customer and make AI actually work inside that company's real systems, tuning models and connecting them to legacy software rather than shipping code and walking away.¹²

THE PATH

Veterans of consulting, systems integration, and enterprise IT, who have spent careers making technology work in messy real-world environments, are natural candidates. Add hands-on skills with AI models, retrieval systems, and agent frameworks.

800%

growth in postings from January to September 2025, per one recruiting firm.¹²

TYPICAL PAY

\$300,000 – \$450,000 total compensation

Recruiting-firm figure for AI-focused companies. Not typical of the broader market.



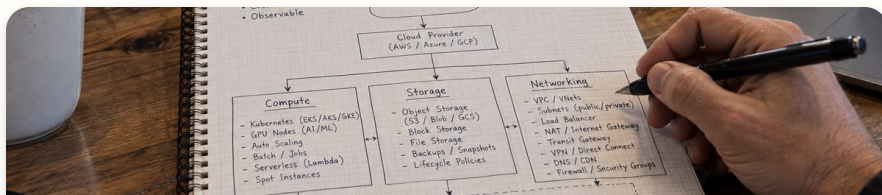
PART TWO

The Operators

AI doesn't run on its own. It runs on cloud platforms, delivery pipelines, and production systems that must stay up around the clock.

- Cloud Engineer
- DevOps and Platform Engineer
- Site Reliability Engineer
- AIOps Engineer

Cloud Engineer



Provisioning the capacity the wave runs on.

THE WORK

Cloud engineers build and manage the computing infrastructure that businesses and their AI systems run on. That now includes provisioning GPU capacity, managing costs that can climb fast, and connecting cloud services to systems still running in company data centers. AI assistants increasingly write the infrastructure-as-code templates; the cloud engineer designs, reviews, and owns the result.

THE PATH

Strong foundations in Linux, networking, and security come first. Infrastructure-as-code tools such as Terraform are essential.



Associate-level certifications from AWS, Microsoft Azure, or Google Cloud are the standard entry credentials, with professional-level architect certifications to follow.

TYPICAL PAY \$110,000 – \$155,000

DevOps and Platform Engineer



A paved, self-service road to production.

THE WORK

DevOps engineers automate how software gets built, tested, and released. Platform engineers take the next step: they build internal platforms that give every development team a paved road to production, with security and standards built in. As AI speeds up how fast code gets written, these platforms become where that code gets tested, secured, and shipped safely.

80%

of large engineering organizations will have platform teams by 2026, up from 45% in 2022¹³



Master Linux, containers, CI/CD, and infrastructure as code. The Certified Kubernetes Administrator (CKA) is respected because it's hands-on: two hours, proctored, solving real tasks on a live command line.¹⁴ The exam fee is \$445.¹⁵

TYPICAL PAY **\$118,000 – \$173,750**

Site Reliability Engineer



Operations treated as a software problem.

THE WORK

Born at Google in 2003, SRE uses measurable reliability targets called service level objectives, paired with “error budgets” that decide when a team can ship new features and when it must stop and fix stability. SREs automate away repetitive manual work and run blameless reviews after incidents.¹⁶

THE PATH

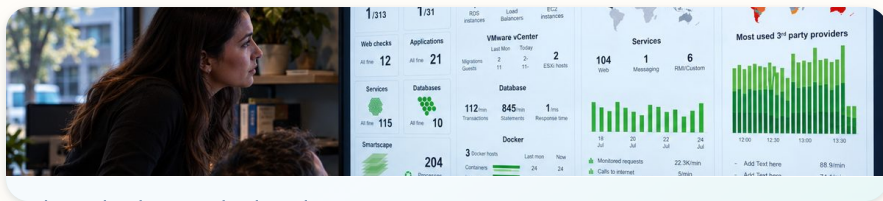
Most SREs come from software engineering or systems administration. Pair the Kubernetes and cloud credentials with experience in observability tools.



Google publishes its foundational book, Site Reliability Engineering, free online — an excellent, no-cost starting point.¹⁶

TYPICAL PAY \$114,250 – \$170,500

AIOps Engineer



THE WORK

AIOps applies AI to IT operations — combining big data and machine learning to automate event correlation, anomaly detection, and root-cause analysis.¹⁷ In practice, AIOps engineers deploy and tune systems that sort through floods of alerts, cut duplicates and false alarms, spot trouble early, and pinpoint causes.¹⁸

THE PATH

There's no single AIOps credential yet, which is exactly why it's an opening. The strongest candidates combine operations experience with working knowledge of monitoring platforms, data analysis, and machine learning basics.

Open

If you've spent years fighting alert storms, this is your chance to lead the automation that ends them.

TYPICAL PAY **No published benchmark yet**

SRE and DevOps ranges (\$114,250 – \$173,750) are the closest reference point.



PART THREE

The Guardians

Every new AI system is a new target, and a new responsibility. These are the people who keep it secure and trustworthy.

- Cybersecurity Analyst
- AI Governance and Compliance Specialist

Cybersecurity Analyst



Protecting the networks, the data, and now the models themselves.

THE WORK

Security analysts protect networks, data, and now AI models themselves. They monitor for threats, investigate incidents, and harden defenses.

THE PATH

Entry-level certifications such as CompTIA Security+ build the foundation.¹⁹ The senior credential, ISC2's CISSP, requires five years of experience; a degree or an approved certification can cover one year, and candidates can pass the exam early as an Associate of ISC2 while they build the rest.²⁰

28.5%

projected growth 2024–34 — the fastest-growing computer occupation, and fifth-fastest overall.³

TYPICAL PAY **\$69,660 – \$186,420**

AI Governance and Compliance Specialist



A career that welcomes lawyers, auditors, and risk managers.

THE WORK

As AI spreads into hiring, lending, healthcare, and government, organizations need people who make sure it is safe, fair, and legal. Governance specialists assess risk, write policies, track new laws, and oversee how AI systems are built and used.

THE PATH

This career welcomes lawyers, auditors, privacy professionals, and risk managers. There are no formal prerequisites for the leading credential.²²



The Artificial Intelligence Governance Professional (AIGP) from the IAPP: 100 questions, 2 hours 45 minutes, maintained with 20 continuing-education credits every two years.^{21 23}

TYPICAL PAY **\$151,800 median**



PART FOUR

The Infrastructure Crew

AI runs on electricity. These are the people who build and maintain the physical backbone — no college debt required.

- Electrician for AI Infrastructure
- Data Center Technician

Electrician for AI Infrastructure

THE WORK

Data centers are among the most electrically demanding buildings ever built — electrical work accounts for 45% to 70% of total construction costs.²⁴ Electricians install switchgear, power distribution, backup systems, and the circuits that keep servers running around the clock.

THE PATH

No college debt required. Most electricians learn through a four- or five-year apprenticeship, earning paid on-the-job training of about 2,000 hours a year plus classroom instruction. Unions and contractor associations sponsor programs, and military or construction experience can shorten it.²⁶ Related trades are booming too: demand for robotics technicians is up 107% and HVAC engineers 67% since late 2022.²⁷

439,000

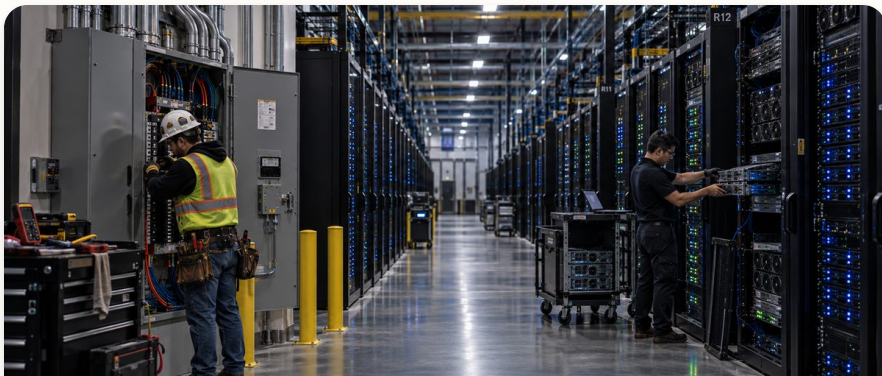
worker shortage across construction, mostly skilled trades²⁵

+30%

pay premium over typical construction work²⁵

TYPICAL PAY \$42,640 – \$108,510

Data Center Technician



Once it's built, they keep it alive.

THE WORK

Technicians install and replace servers, run and test cabling, troubleshoot hardware, and keep the systems that power AI online.

THE PATH

Microsoft's Datacenter Academy partners with community colleges and vocational schools near its facilities, providing curriculum guidance, scholarships, mentorship, simulation labs, and work experience.²⁸ At Atlanta Technical College, students work toward CompTIA A+ or Server+. ²⁹ At Des Moines Area Community College, programs run from eight weeks to about 20 months.³⁰

TYPICAL PAY **\$48,000 – \$110,000**



PART FIVE

What They Pay

A salary companion to the thirteen careers — what each one pays in 2026, and how to read the numbers honestly.

- How to read this guide
- The four parts, role by role
- The takeaway

How to Read This Guide

Salary figures come from two main kinds of sources, and they measure different things.



Bureau of Labor Statistics

Government survey data covering every employer in the country. Ranges run from the lowest 10% of earners to the highest 10%, so they span beginners through top veterans. Base wages only — no bonuses or stock.

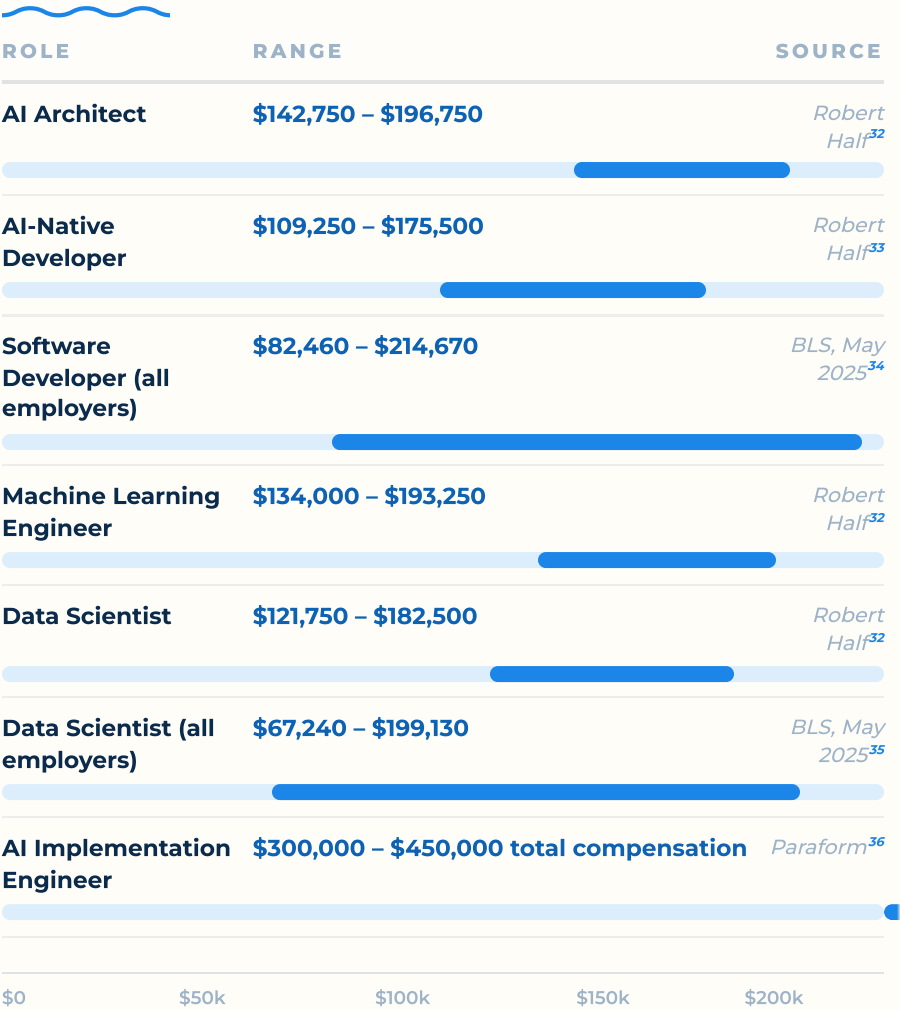


Robert Half 2026 Salary Guide

Starting-salary benchmarks from one of the largest U.S. staffing firms. “Low” means newer to the role; “high” means extensive experience with advanced skills.³¹

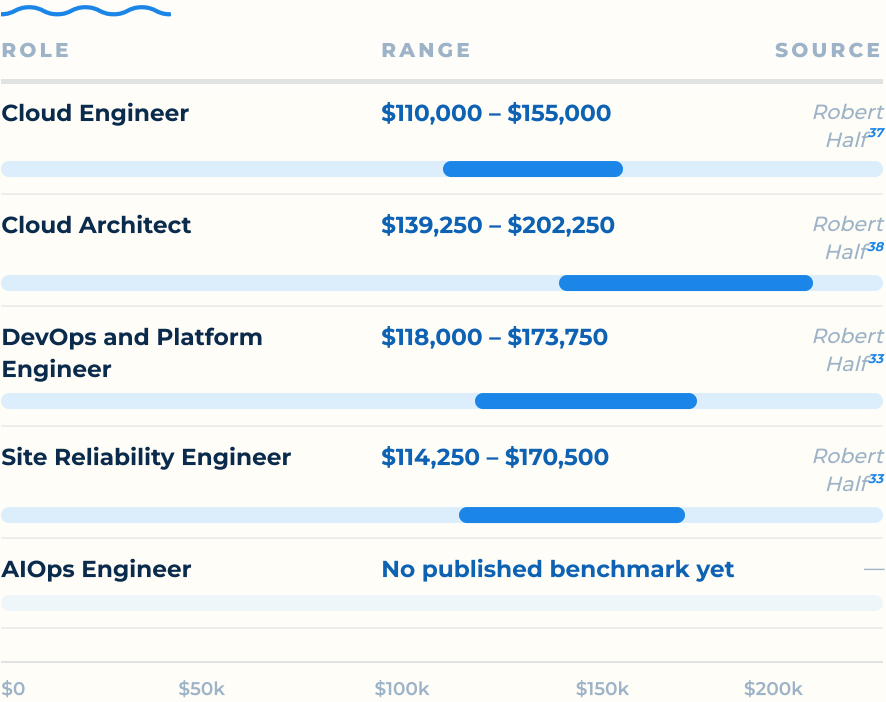
Pay varies widely by city, industry, and employer. Large tech companies often add stock and bonuses on top of base pay, so treat these figures as a baseline, not a ceiling.

The Builders



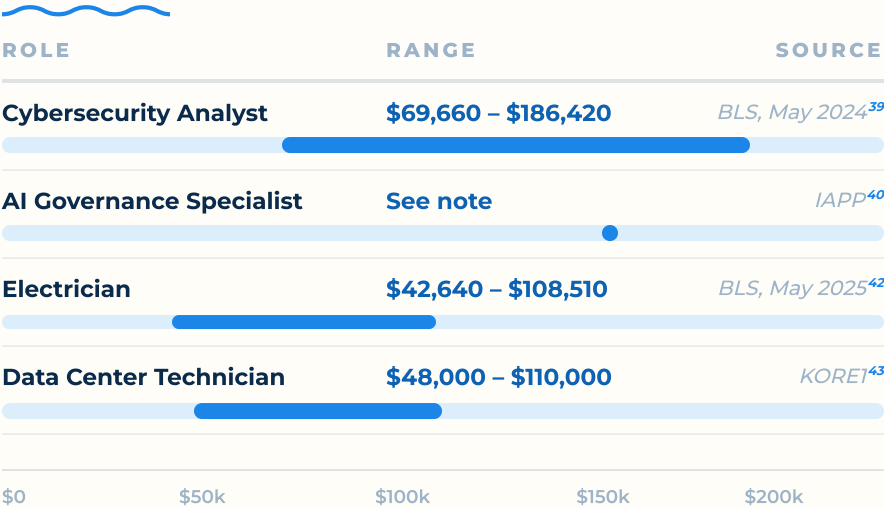
The AI implementation engineer figure comes from a recruiting firm and reflects total compensation at AI-focused companies, where senior roles can exceed \$500,000.³⁶ It is not typical of the broader market.

The Operators



No major salary survey tracks AIOps as its own role yet. Because the work builds on SRE and DevOps experience, those ranges (\$114,250 to \$173,750) are the closest reference point. Platform engineers are likewise benchmarked under DevOps in current surveys.³³

The Guardians & the Crew



The IAPP’s 2025–26 survey of more than 1,600 professionals found a median of \$151,800 for AI governance work, and over \$169,700 for those handling both privacy and AI governance — rising to \$221,000 for technical roles in the technology sector.^{40 41} Sources vary widely for data center technicians: ZipRecruiter’s posting data shows most between \$42,500 and \$60,000, with the top 10% at \$77,000.⁴⁵

The Takeaway



Above the median, every one of them.

Every role on this list pays above the U.S. median for all occupations, which the BLS put at \$50,980 in May 2025.³⁴ Many clear six figures at the midpoint.

No debt

The skilled-trade paths — electrician and data center technician — get you there without a four-year degree or student debt, often with pay while you train.⁴⁴

Your Board, Your Wave



Look at the list again. It has room for the architect and the apprentice, the developer and the compliance officer, the SRE on call at 2 a.m. and the electrician pulling cable in a new data center.

It has room for the recent graduate and for the veteran with thirty years in enterprise IT, whose experience of how real systems break is exactly what AI can't supply on its own.

The World Economic Forum found that the most in-demand skills are in AI, big data, and cybersecurity — but that human skills like creative thinking, resilience, flexibility, and agility remain highly sought after.¹

The lesson

Machines are getting smarter, and the people who learn to direct them will be more valuable than ever.

PADDLE OUT



Same ocean. New horizons.

- 1 Pick one role.
- 2 Take one course.
- 3 Sign up for one exam, or one apprenticeship interview.

The wave is already rolling in.

About the Author



John David Marx has spent forty-four years in information technology — from a Burroughs mainframe console at night to six years at Red Hat — and has been starting companies since before he graduated, beginning with the PC Company and, in 1989, the Open Systems Group.

The middle of that career went to cloud modernization, DevOps, and platform engineering inside large organizations — the unglamorous work of getting software to production reliably, over and over. The last few years have pulled the other way, toward sovereign, local AI: compute, data, and ideas that stay with the people who made them.

He is sixty-four, self-employed again by choice, and runs the Webspinner Foundation, which had eighty-four projects under way as this book went out. He believes the best thing a new tool can do is make room for more people rather than fewer.

He works within reach of the water, and has made his peace with the squirrels.

ABOUT THE AUTHOR

On the Record



At the microphone. He has been explaining this out loud for most of his career.



On stage at DevOps World, on behalf of Microsoft and GitHub — arguing, as usual, about pipelines.



On an Intel panel in New York, as Red Hat's FSI Region Director — the beat that later became “From Banks to Chips,” his argument that domestic fabs are now as load-bearing as the banks were in 2008.

Sources



Every figure in this book is cited. The notes that follow are numbered continuously — 1 to 30 for the careers and 31 to 45 for the salary companion — and the superscript numbers in the text point straight at them. A full bibliography follows the notes.

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