Caige Payne

Junior Software Developer | IT Support & Systems Administration

Centurion, Gauteng · 064 645 4088 · caigepayne@gmail.com · LinkedIn · zetapayne.me · Driver's licence (Code A)

PROFILE

Self-taught software developer and IT support technician who has been building software since the age of 12. Strongest in Python and C++, with hands-on experience supporting a live business: I currently build and maintain the company-wide CRM for Smiles Driving Academy, provide IT support to its staff, and run Linux web servers, databases, DNS and email for freelance clients. Known for picking up unfamiliar systems quickly, taking problems apart until they are understood, and shipping software that real people use every day. Security and efficiency come first in everything I build, shaped by years of penetration testing and security research as a personal interest. I also understand how large language models work at the neural-network level, and use both cloud and locally run AI models in my work.

KEY SKILLS

- **Programming:** Python (advanced), C++ (strong), C# / .NET (WPF desktop apps); partial knowledge of many other programming and web languages, including JavaScript, HTML/CSS, PHP, SQL (MySQL, SQLite) and Lua; earlier experience with Delphi and x86 assembly
- **IT support:** end-user support for a 15-person office, Windows 10/11 setup and troubleshooting, software deployment and updates, hardware and peripheral issues, crash diagnosis
- **Servers and web:** Linux (Ubuntu) VPS setup on Vultr and Contabo, shared hosting on Xneelo, nginx and Apache, MySQL/MariaDB, domains and DNS, business email, SSL/TLS, firewall (UFW), website deployment (WordPress, PHP)
- **Systems and security:** penetration testing and security research (long-standing personal interest), Windows internals, reverse engineering and debugging (Ghidra, IDA, x64dbg, ReClass, OllyDbg, dnSpy, JADX), network analysis (Wireshark, Fiddler, Proxyman, Burp Suite), applied encryption (AES-256, Argon2), secure web practices (CSRF protection, prepared statements, rate limiting)
- **Networking:** strong understanding of how network protocols work - TCP, UDP, ICMP, ARP, DNS, HTTPS, QUIC, SSH, SMTP, IMAP, POP3, SNMP and NTP; experienced at capturing and analysing network traffic, requests and data
- **Memory and performance:** in-depth knowledge of how software uses memory and system resources; experienced at inspecting and understanding process memory, profiling CPU, RAM and GPU usage, and tracking down leaks, crashes and slowdowns
- **Tools:** Visual Studio, VS Code, Git, PowerShell, Selenium, OpenCV, PySide6/Qt, pandas, Dear ImGui, DirectX 9/11
- **AI and LLMs:** understanding of how large language models work under the hood (transformer neural networks, tokens, embeddings, quantisation, GPU memory limits); hands-on use of cloud and locally run models (Ollama, Whisper speech-to-text, text-to-speech, embedding search, AI image and video generation), structured LLM output, and AI-assisted development workflows

EXPERIENCE

Software Developer & IT Support

2023 - Present (contract)

Smiles Driving Academy (Pty) Ltd, Gauteng

Hired for a series of projects that grew into an ongoing role as the company's developer and IT support.

- **Compass CRM (Mar 2026 - present):** lead developer of the company-wide CRM that replaced the academy's paid tools (17hats and Asana), used daily by about 15 office staff and instructors. Built in C# / .NET 8 (WPF) with MySQL and SQLite.
  - Client and lead management, invoicing with PDF generation, Google Calendar sync, email integration and dashboards
  - Automated instructor pay calculation with built-in fraud checks on lesson records
  - Offline-first design: each PC keeps a local database that syncs with a central MySQL server, so staff keep working if the connection drops
  - Secure PHP web portal for instructors (CSRF protection, login rate limiting, prepared statements)
  - Auto-update system and release scripts so new versions reach every PC; diagnosed and fixed live data-loss and crash issues; cut the database from 178 MB to 14 MB
  - Turn management meetings into tracked feature lists and train staff on changes
- **Licence booking automation (Sep 2025 - 2026):** built a Python tool that books learner's and driver's licence test slots on the national NATIS online system for the academy's clients. Built two versions: one automating a real browser with Selenium, the other working directly with the site's web requests.
- **IT support:** day-to-day support for office staff - PCs, software installs and updates, email, printers and network issues.
- **First projects (2023):** recovered text from blurry, angled photos using image enhancement and OCR; produced a full K53 training video, creating all animations and doing the complete edit with voice-overs.

Freelance Web Developer & Server Administrator

2023 - Present

Self-employed

- Set up and manage Linux (Ubuntu) servers on Vultr and Contabo and shared hosting on Xneelo: nginx/Apache, MySQL databases, domains, DNS records, business email and SSL certificates
- Built and host websites for small businesses, including a quote-request site with an admin panel for an electrical contractor in Pretoria (HTML/CSS, PHP)
- Run my own server at zetapayne.me, hosting client sites and software update downloads

Independent Software Developer

2016 - Present

Self-employed

- Started writing software at 12; by 15 had taught myself reverse engineering and was building and selling my own software tools to an online customer base, handling development, customer support, updates and marketing (via YouTube, forums and Discord) on my own
- Built desktop applications in C++, Python and C# covering system monitoring, networking, file management and security tools

SELECTED PROJECTS

- **Karma System (C++, in development):** an all-in-one Windows utility suite with a custom DirectX 11 / Dear ImGui interface and 40+ tools, including a system monitor (CPU, memory, disk, network), an encrypted password manager (AES-256-GCM, Argon2id), a BitTorrent client, a system-wide ad and tracker blocker, a text/hex editor and a crash reporter. Packaged with an MSI installer and auto-updater.
- **Forex market research platform (Python):** USD/ZAR data analysis tool with 50 technical indicators, backtesting and statistical testing (pandas, scikit-learn), plus a live price monitor that raises desktop alerts on sudden moves and scores breaking news headlines.
- **Web traffic recorder (Python):** developer tool that records everything a website does while you browse - network requests, console output, page changes and storage - via the Chrome DevTools Protocol, with an automated test suite.
- **Local AI tools (Python):** a meeting transcriber that turns 5-hour recordings into text on a home GPU, and a pipeline that researches a topic and produces a narrated video, both running fully offline. Chose, quantised and scheduled several LLMs and speech models so they run on a single 8 GB GPU, and used embeddings to match footage to narration.
- **Computer vision tools (Python, C++):** barcode and QR code reading, OCR text extraction from photos and screenshots, and face detection in images and live screen capture (OpenCV).
- **APIs and integrations:** built REST APIs (Python FastAPI, PHP), WebSocket services for real-time data, and webhook receivers, including a WhatsApp Business webhook relay for the Compass CRM.

EDUCATION

National Senior Certificate - Lyttelton Manor High School, 2022

- Information Technology: Level 7 distinction (80%+)

LANGUAGES

English (fluent) · Afrikaans (conversational)

ACHIEVEMENTS

- **Google Foo.bar:** received an invitation to Google's invite-only coding challenge at age 14 and reached Level 4
- **Microsoft bursary offer:** a few months later, offered a bursary by Microsoft and invited to visit Microsoft South Africa's head office in Johannesburg

REFERENCES

Available on request.