Carter Allen

Helping biopharma teams turn automation, data and AI into working science

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SUMMARY

Lab automation engineer with 7+ years designing, deploying and supporting automated wet-lab systems in CLIA/CAP-regulated and research environments, most recently as founding application engineer at Monomer Bio. I bridge hardware, software and biology, and I now build daily with LLMs and agentic tooling. Looking for roles at impactful life sciences companies using today's tools to build a healthier world.

EXPERIENCE

Career break · Family caregiving and AI deep-dive — Jul 2026 – Present

- Stepped away from Monomer to care for a family member; used the time to go deep on applied AI.
- **Deep Atlas ML Intensive** (Sep 2026): transformer internals, LoRA fine-tuning, and a RAG system evaluated with retrieval metrics (hit@k, MRR) and grounded-answer checks.
- Built local-first AI tools with Claude Code agents: a speech pipeline (Whisper transcription, pyannote diarization, voiceprint speaker ID) with background processing, a Model Context Protocol (MCP) server for guarded email drafting, and an iOS app exporting health data to a personal knowledge base.

Monomer Bio · Founding Application Engineer — Aug 2021 – Jul 2026

- Grew the professional-services arm to 10+ customers automating manual lab processes across cell culture, liquid handling and imaging in biopharma and academia.
- Designed and implemented 8 automated work-cells of ~5–15 robotic instruments on Monomer's software, owned customer success from contract through years of operation, and advised on instruments, assays and data architecture.
- Led new product development for Monomer's first software-only offering, an LLM-powered SaaS for monoclonality review; took three design partners from build to paying customers within 3 months.
- Guided the MCP architecture that lets AI agents drive Monomer's data platform and scheduler; spoke at the AI Science Summit (Jun 2026) on benchmarking AI agents that run wet-lab experiments.

Counsyl (Myriad Women's Health) · Process Development Engineer III — Sep 2019 – Aug 2021

- Built a Django application for interchangeable assay execution across Tecan EVO, Agilent Bravo and other liquid handlers, improving work-cell flexibility and throughput.
- Led transfer and 10× scale-up of a COVID-19 PCR testing assay onto automated platforms (Biomek FXp, QSSP, Agilent Bravo), including IQ/OQ/PQ and phased rollout.
- Helped improve a 4-hour NGS library-prep step and expanded capacity by replicating the library-prep method across two Biomek FX liquid handlers.
- Raised PCR quantification yield 15% and cut sample turnaround 30% by automating a previously manual pre-amp step.
- Trained CLIA personnel, wrote maintenance and requalification procedures, and resolved LIMS issues with software engineers.

uBiome · Lab Automation Engineer — Jan 2019 – Aug 2019

- Implemented and supported automation in CLIA/CAP/ISO-certified workflows: risk analysis, user requirements, IQ/OQ/PQ on Biomek platforms.
- Built Python calibration tools and CAD fixtures for an in-house liquid-handling platform.

UCLA Zipursky Lab · Mechatronics / Automation Engineer — Mar 2018 – Jan 2019

- Built a low-cost robotic imaging system (Raspberry Pi, Python, stepper motors) to track Drosophila life cycles, cutting hands-on time 90%.

SKILLS

AI / software	Python, TypeScript, Git, Django; Claude Code and agentic workflows, MCP, RAG and evals, local LLMs (Ollama), Whisper / pyannote
Lab automation	Hamilton, Tecan EVO, Agilent Bravo, Biomek FXp, QSSP, Opentrons; PAA KX-2, PreciseFlex 400, UR10e; IQ/OQ/PQ; LIMS
Wet lab	Cell culture, NGS library prep, PCR/qPCR, SDS-PAGE, Western blot, assay transfer and scale-up
Hardware	SolidWorks CAD, Raspberry Pi, Arduino, 3D printing, electromechanical troubleshooting
Quality	CLIA, CAP, ISO, GMP-adjacent quality systems, SOP development

EDUCATION

University of California, Los Angeles · B.S. Biophysics — 2019