

## David M. Rector

Senior Software Engineer — Simulation & Cross-Platform Systems

Incline Village, NV • [rectorsquid@gmail.com](mailto:rectorsquid@gmail.com) • 775-772-9186 • [blog.rectorsquid.com](http://blog.rectorsquid.com)

## Professional Summary

Senior software engineer with extensive experience building simulation systems and cross-platform products across Windows, macOS, iOS, Android, and web. Creator of a widely used mechanical CAD simulator and lead developer on enterprise mobile applications. Strong background in performance-critical systems, native Swift and C#, client/server architectures, and applied AI integration. Known for owning complex products end-to-end, from architecture through shipping and long-term maintenance.

## Core Technical Skills

- Simulation systems & kinematic modeling
- Cross-platform application development (Windows, macOS, iOS, Android, Web)
- Swift (AppKit/Cocoa), C#, C++, Java
- Client/server systems (Java, Tomcat)
- Performance optimization & algorithm design
- Applied AI integration (speech → structured data workflows)
- UI/UX design for technical applications
- Distributed processing & IPC
- Mapping, GPS, audio/video capture

## Featured Personal Project

### Linkage Mechanism Designer & Simulator (2000–Present)

Creator and sole developer of a CAD application used worldwide for 2D mechanical linkage design and real-time simulation. [www.linkagesimulator.com](http://www.linkagesimulator.com)

- Designed custom kinematic solver with precomputed dependency graphs for fast interactive simulation
- Implemented real-time animation of mechanical systems during design
- Shipped production Windows application with global user base
- Currently developing native Swift macOS version
- Full product ownership: architecture, simulation engine, UI, tooling, and distribution
- Used by hobbyists, educators, and engineers internationally

## Professional Experience

### Senior Software Developer

Westlake Software, Inc. — Calabasas, CA (Remote) | 2012–Present

- Lead engineer on mobile workforce platform spanning iOS, Android, Windows UWP, and Web
- Built iOS client from scratch, implementing full feature parity with existing platforms
- Maintain and enhance Java/Tomcat backend services
- Implemented AI-assisted speech-to-form automation, converting spoken input into structured inspection data
- Integrated mapping, GPS tracking, routing, and audio/video/still image capture
- Platform used by distributed field teams supporting a major global technology company and large outdoor/airport advertising firms for retail audits, inspections, and installation workflows
- Investigate and prototype new technologies to improve client-side workflows and data collection

### **Senior Software Engineer**

**Active Motif / TimeLogic Corporation** — Carlsbad, CA (Remote) | 1997–2015

- Developed high-performance data comparison tools for biotechnology applications
- Built bioinformatics tooling used by leading genomics researchers for large-scale sequence analysis and annotation
- Designed and implemented Windows device drivers for custom accelerator hardware
- Created distributed job-processing mechanisms across multiple machines
- Optimized core comparison algorithms for large datasets
- Participated in Windows NT development and Unix port
- Led and mentored developers on multiple engineering projects

### **Earlier Career (Summary)**

Early career focused on multimedia systems, embedded software, device drivers, proprietary file systems, and communications systems. Roles included senior engineer and cofounder positions working on non-linear video editing, digital video playback, and hardware-integrated software platforms. Details available upon request.

### **Additional Projects & Writing**

- Various personal software projects documented at: [blog.rectorsquid.com/programming-projects](http://blog.rectorsquid.com/programming-projects)
- Artistic and mechanical projects documented at: [blog.rectorsquid.com/art-projects](http://blog.rectorsquid.com/art-projects)