Duncan Fairweather Staff Go Developer

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PROFILE SUMMARY

- **Staff Go Developer** with **11 years** on **distributed systems and cloud control planes**, now leading **cluster orchestration and API design** for a **managed database service**, after almost 5 years on **link and click services** at Bitly.
- Day to day in **Go**, **gRPC**, **Kubernetes** (controller-runtime, client-go), **CockroachDB** and NSQ, across **AWS**, Google Cloud and Azure, with **Prometheus** and OpenTelemetry for visibility.
- Sets direction on **API contracts**, **operator design** and **Go upgrade policy** for the control plane, writes the **design doc** before each cross-team change, and measures every rollout against an **SLO**.
- Works with **9 control plane teams**, **product management**, **developer experience** and **support**, and chairs the **weekly architecture review** for cloud services.
- Mentors **5 senior engineers**, 2 of them since promoted to staff, wrote the **internal Go style guide**, and runs the **quarterly Go upgrade** for 60+ services.

TECHNICAL SKILLS

Languages:	Go, SQL, Bash, Python, C
Go Libraries & Frameworks:	net/http, Cobra, client-go, controller-runtime, Kubebuilder, grpc-go
APIs & Protocols:	gRPC, Protocol Buffers, REST, OpenAPI, grpc-gateway
Databases & Messaging:	CockroachDB, PostgreSQL, MySQL, NSQ, Redis
Cloud, Containers & CI/CD:	Kubernetes, AWS, Google Cloud, Microsoft Azure, Helm, Terraform, GitHub Actions
Testing & Code Quality:	go test, envtest, native fuzzing, benchstat, golangci-lint, govulncheck
Observability & Profiling:	pprof, continuous profiling, Prometheus, OpenTelemetry, Grafana, Jaeger

EDUCATION

University of Texas at Austin — **B.S. in Electrical and Computer Engineering** — Austin, TX · Aug 2011 to May 2015

WORK EXPERIENCE

Cockroach Labs — **Staff Software Engineer, CockroachDB Cloud** — New York, NY · Mar 2020 to Present

- Wrote the API rules for the **CockroachDB Cloud** control plane (gRPC deadlines, retries, versioned Protocol Buffers) and got 9 teams to adopt them, cutting breaking client changes from 11 a year to **1**.
- Led the move of cluster orchestration to **controller-runtime** operators on **Kubernetes** across AWS, Google Cloud and Azure, with idempotent reconcile loops and envtest suites, cutting cluster creation time from 18 minutes to **7**.
- Designed the command structure of the **ccloud** CLI in **Cobra** with the developer experience team and set up signed GoReleaser builds, reaching **9,000 monthly users** in its first year.
- Profiled the control plane's metrics pipeline with **pprof** and continuous profiling, replaced per-sample allocations with batch encoding, and cut CPU across 400 pods by **38%**.
- Run the quarterly **Go version upgrade** for 60+ control plane services, with **govulncheck** gates and shared modules for common libraries, cutting each upgrade from 6 weeks to **9 days**.

Bitly — **Senior Software Engineer** — New York, NY · Jul 2015 to Feb 2020

- Rewrote click counting as **Go** consumers on **NSQ** with idempotent writes to sharded **MySQL**, cutting the delay between a click and the customer dashboard from 5 minutes to **15 seconds**.
- Fixed lock contention and a goroutine leak in the redirect service with **context** timeouts and sharded maps, cutting p99 redirect latency at peak from 48 ms to **11 ms**.
- Brought table-driven tests and **-race** runs into CI for the link services, cutting flaky builds from **1 in 5 to 1 in 60** and unblocking daily deploys.