

EDUCATION

- **North China University of Technology** Beijing, China
B.Sc. in Information and Computational Science 2015 – 2019
- **Language Proficiency:** IELTS (International English Language Testing System) Academic: Overall Band Score: 6.5

EXPERIENCE

- **Beijing ColorfulClouds Technology Co.,Ltd.** Beijing, China
Senior Backend Engineer June 2019 – March 2025
 - **High-performance Geospatial Computation Service (peak QPS 20K, P99 < 5 ms):** Led reimplementation of legacy Flask/FastAPI service in Go+Gin; introduced precomputed spatial grids and `sync.Map` caching, reducing hardware costs to **10%**.
 - **High-performance Geospatial Information Query Service:** Including latitude/longitude to administrative divisions, timezone conversion, elevation queries; Implemented using Go+R-tree+Point-In-Polygon algorithms with millisecond-level or sub-millisecond latency.
 - * China region lat/lon to administrative division lookup module, 20 microseconds per query.
 - * Self-developed global reverse geocoding service, providing internal gRPC calls with P99 < 6 ms, reducing costs and improving stability.
 - * Global lat/lon to timezone conversion open-source project with queries under 10 microseconds, see Project tzf.
 - * Deployed high spatial resolution (30 m) elevation data service, processing 1500 QPS with 500 microsecond latency on a single CPU core.
 - **Grid Data API Refactoring (team of 2):** Mentored migration from Python+NumPy to Go+mmap; improved single-Pod (4C6G+200 GB SSD) throughput to 5 000 QPS and enabled YAML-based dynamic configuration, shortening time from requirement to release from weeks to days.
 - **Multi-Source Weather Data Pipeline & Offline Evaluation (team of 3):** Led architecture design and guided 2 engineers; built data pipelines for NOAA GFS, ECMWF IFS, etc.; backtested hourly data from over 2 000 stations using Parquet+Polars; visualized RMSE, TS, and ACC in Grafana to inform product selection.
 - **Kubernetes Migration & CI/CD (30+ services, 15% cost reduction):** Containerized core weather services and migrated to K8s; managed disk dependencies with StatefulSets; introduced GitHub Actions → ArgoCD pipeline; completed smooth cross-region traffic switchover in Q1 2023.
 - **Cross-Functional Project Delivery:** Coordinated with algorithm and product teams to deploy 1 km satellite visible-light tile layer for China region; transitioned geodata visualization from single images to tiles, enhancing user experience.
 - **ToB Presales/Delivery & Customer Success (100+ clients):** Participated in presales communication and requirements clarification, provided technical solutions and demos; handled technical support and issue resolution; developed standardized integration documentation/examples/FAQs; facilitated integration with 100+ clients across consumer internet and device manufacturers, transportation and mobility, logistics and supply chain, agriculture and rural development, energy and utilities sectors.
 - **Team Building & Documentation:** Mentored 8 backend engineers (4 remained at departure); authored design docs, FAQs, and intro guides for weather data services, improving cross-functional communication; continuously tracked technology trends, drove technical stack upgrades and toolchain improvements, and implemented new features based on open data.
 - **Technical Sharing & Blogging:** Published articles: "Meteorological Station Data Query", "How to look up GPS location belongs to which administration?", "Building a High-Performance Elevation API", and "Evolution of tzf".

PROJECTS

- **High-Performance Lat/Lon → Timezone Conversion Series:** Project tzf
 - `ringsaturn/tzf`: original Go implementation
 - `ringsaturn/tzf-rs`: Rust version
 - `ringsaturn/tzfp.py`: Python wrapper via PyO3
 - Online demo: Wasm build
- **Offline Japan Administrative Division Query:** `reversejp`, 12 microseconds per query
- **High-Performance Rust Point-In-Polygon Library:** `geometry-rs`

SKILLS

- **Languages:** Python, Go, Rust
- **Technologies:** Redis, MongoDB, Kubernetes, Parquet, GRIB, NetCDF, Polars