HO YIN (DANNY) LAI

PRINCIPAL SYSTEMS ENGINEER

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Summary

Cloud, automation, and Kubernetes engineer with 20 years of hands-on experience in DevOps, multi-cloud infrastructure (Amazon Web Services and Google Cloud), open-source and enterprise automation, financial trading technology, project management, and technical support. Designs and runs scalable, containerized platforms using Kubernetes, continuous integration and delivery pipelines, and infrastructure as code.

Professional Summary

FactSet	Kubernetes Platform Engineer	2024 – Present
FactSet	Cloud Architect	2022 – Present
FactSet	Cloud Automation Engineer	2018 – Present
Portware | a FactSet Co	Technical Project Manager | Development Operations	2011 – Present
Portware LLC	Senior Technician Support Engineer	2010 – Present
Portware LLC	Technician Support Engineer	2006 – Present
Tradeware Global	FIX Support | FIX Certification	2006 – 2006
Electronics Boutique	Assistant Manager	2001 – 2006

Key Accomplishments & Technical Strengths

- Architect, maintain, and optimize fleets of Kubernetes clusters and the applications, ensuring high availability, security compliance, and developer productivity through automated deployment pipelines and infrastructure management.
- Produce and govern 2500+ AWS accounts with continuous compliance monitoring and automated enforcement of company standards, providing secure, scalable cloud infrastructure across the organization.
- Design and deploy operational trading systems across bare metal, VMs, and cloud environments using infrastructure as code methodologies with Terraform, Tofu, CloudFormation, AWS SAM, Puppet, Salt, and Ansible.
- Progressed from hands-on support to escalation management and team leadership.
- Manage complex projects while collaborating on day-to-day technical decisions across cross-functional teams, maintaining effective communication with internal stakeholders, customers, and vendors.

Certifications

AWS Certified Solutions Architect Associate – Validation Number 0Z7M2ZDLK1BQQ856.

Education

New York City College of Technology (NYCCT) – Bachelor of Technology, Computer System Technology

Computer Skills

- AI: Copilot, Claude, Ollama.
- Kubernetes Tooling:
  - Experienced: Crossplane, Argo suite (CD, Workflows, Rollouts, Events), Kyverno, Dex, Pinniped, vCluster, External Secrets Operator (ESO), cert-manager, Envoy Gateway.
  - Familiar: Wiz, Karpenter, Open Policy Agent (OPA), Cluster API (CAPI), Rook-Ceph.
- Cloud Providers: Amazon Web Services, Google Cloud Platform.
- CI/CD and automation tools:
  - Terraform(open source and enterprise), Tofu, AWS SAM, CloudFormation, GitHub Actions, GitHub Apps, Ansible, AWX, Puppet, SaltStack, Packer, Vagrant, Maven, Jenkins, PXE boot, Kickstart.
- Virtualization and containers: Docker, KinD, Podman, Amazon ECR, Amazon ECS, VMware, VirtualBox, Heroku.
- Databases: PostgreSQL, Oracle, MySQL, DynamoDB, graph database (Gremlin, AWS Neptune).
- Languages and practices: Python, Golang, Bash, test-driven development.

Employment History

FactSet Research Systems https://www.factset.com
Kubernetes Platform Engineer *June 2024 – Present*

- Build and run the company's internal deployment platform, which takes every workload from across the company and deploys it into Kubernetes clusters. Integrates with Backstage, the community developer portal.
- Create and run two fleets of Kubernetes clusters on Amazon Elastic Kubernetes Service (EKS) and onprem: one managed through the vendor Rafay, and one self-managed.
    - Release to the fleets twice a week, once to non-production clusters and once to production clusters, through Argo CD and Argo Workflows.
    - Automate platform releases that runs on Argo Workflows in the admin cluster pair.
    - Plan, test, and execute Kubernetes version upgrades for EKS and onprem clusters.
- Migrate from the vendor-managed Kubernetes service to a self-managed fleet using open-source tools: Pinniped for access, Dex for single sign-on, and Crossplane for continuous management.
    - Move platform add-ons (Kyverno, cert-manager, Venafi, External Secrets Operator, Wiz, vCluster) to Argo CD.
    - Automate tenant kubeconfig access, machine-to-machine kubectl access, and Pinniped kubeconfig creation.
    - Contribute to open-source Dex: a merged fix lets users with more than 1,000 Microsoft groups sign in. Fix Dex sign-in for Grafana and Argo CD on Crossplane clusters.
- Build disaster recovery (DR) for Crossplane, with a development admin cluster pair to test failover and the release cycle, and a production standby cluster with failover rehearsal.
- Migrate from Ingress to the Gateway API using Envoy Gateway, and write the onboarding documentation for tenants.
- Migrate away from deprecated Kubernetes APIs, such as moving External Secrets Operator resources from v1beta1 to v1, with dashboards for users to find remaining calls to the old version.
- Build a Google Cloud / Google Kubernetes Engine (GKE) prototype with subnets and ingress, using carrier-grade NAT (CGNAT) address space for in-cluster routing to save routable IP space.
- Build a Model Context Protocol (MCP) server for Kubernetes fleet management, and automate fleet reports for Environment Manager and Crossplane clusters.
- Maintain tenant-facing and internal documentation sites.
- Use Claude Code with custom plugins and skills to automate platform operations.

FactSet Research Systems https://www.factset.com
Cloud Architect *June 2022 – Present*

- Governed all Amazon Web Services (AWS) accounts, and kept account workflows smooth for all use cases in all regions.
- Gathered pain points from users and planned the next development cycles. Covered organization-level and account-level resources.
- Created and promoted architecture templates (blueprints) with best practices and integration with internal services.
    - Instances created with central team settings: metric collection (Telegraf), configuration management (Puppet), patching requirements, and so on.
    - Amazon Elastic Container Service (ECS) on Fargate (serverless containers), with alerting and a load balancer.
    - Amazon Elastic Kubernetes Service (EKS) blueprint, with Kyverno policy reporting, and instance metadata locked down so pods cannot use the node's role.
- Created, hosted, and proctored internal workshops to promote cloud knowledge, including container and Terraform workshops and a simple ECS Fargate blueprint for training new hires.
- Created internal policies for resources to ensure compliance using open-source tool Cloud Custodian https://cloudcustodian.io/. Some examples are:
    - S3 buckets must be non-public.
    - IAM users must have credentials rotated every 90 days.
    - Instances must have specific tags and roles. Instance profiles must have specific settings.
    - Instances must launch from approved images, with scheduled blocks (brownouts) before enforcement.
- Promoted AWS best practices:
    - Architectural review and migration of existing services from onprem to the cloud, using serverless resources such as Lambda, DynamoDB, and CloudFront wherever possible.
    - Managed cloud deprecation notices, such as TLS deprecation and IAM role assumption changes.
- Built a minimal "landing zone" (a governed starting environment) in Google Cloud Platform (GCP).
    - Daily automated enforcement through GitHub Actions: organization folders, project creation with the billing account attached, labels, and project metadata.
    - Organization-wide audit logging, Cloud Key Management Service (KMS), secret management, and Microsoft Defender for Cloud. Wiz security scanning added in 2025.
- Built automation for the Databricks platform used by the machine learning teams.
    - Built a project API that created and deleted Databricks projects, with JSON logs sent to central logging.
    - Terraform enforcement modules that ran daily across all projects: per-project settings, secret scopes, service principal credentials, tags, and workspace permissions.
    - Security guardrails: personal access tokens expires (within 60 days), trusted account, and compute policies.
    - Set up Unity Catalog (the Databricks data governance layer) in production, and a billing module.

FactSet Research Systems https://www.factset.com
Cloud Automation Engineer *January 2018 – Present*

- Implemented self-service AWS account creation, resulting in 2500+ active AWS accounts currently in use.
  - See AWS blog: https://aws.amazon.com/blogs/devops/factset-automation-at-scale/
  - Enforced account settings such as shared virtual private clouds (VPCs), OpenID Connect (OIDC), and roles.
- Implemented an in-house self-service frontend portal, "Service Catalog", to provide AWS resources to developers.
  - The platform provisioned and monitored over 12,000 AWS resources.
  - Maintained the stability of the backbone of this self-service portal, which ran on Kubernetes (Amazon EKS) and included Argo Workflows (container orchestrator), Prometheus (monitoring), Grafana, and Loki.
- Implemented an internal "Patching API":
  - Reported on the patching status of all AWS EC2 instances (servers) in all company-owned AWS accounts, through Grafana and InfluxDB (time series database).
  - Executed inline patching for persistent EC2s (Linux and Windows), through AWS Automation documents.
  - Written in Python, using Application Load Balancer (ALB), Lambda, and DynamoDB as a serverless stack.
- Automated the complete build of isolated systems per customer in the cloud, including VPC, subnets, EC2s, RDS, EFS, Directory Services, security groups, S3, IAM users and roles, OIDCs, and Lambda, using infrastructure as code tools.
- Ensured resources were 100% under configuration management via Ansible, and automated reporting on drift.
- Monitored infrastructure using CloudWatch, InfluxDB, Telegraf, and Grafana.

Portware, a FactSet Co https://www.factset.com
Technical Project Manager | Development Operations *Sept 2011 – Present*

- Acted as liaison and translator between management, project managers, sales, and engineering.
- Created and enforced workflow procedures, and wrote specifications for product enhancements.
- Served as technical lead for "Portware Cloud". Responsible for 80+ client systems, at the software and hardware level.
- Automated the patching of Shellshock, Heartbleed, and Ghost vulnerabilities across 500+ onprem servers.
- Implemented automation workflow via Puppet (https://www.puppet.com/) and Salt Stack (https://saltstack.com).
- Managed a local team of 4 and a global team of 15, and hosted weekly team meetings, recruiting, and training.

Portware LLC https://www.portware.com
Senior Technician Support Engineer *January 2010 – Present*

- Provided support for Portware's Execution Management System (EMS), and proprietary trading system, Alpha Pro.
- Coordinated with the Quality Assurance team to test trading systems by reproducing errors and bugs.
- Implemented client systems remotely and onsite, from bare metal, including hardware, operating systems, Financial Information eXchange (FIX) connections (inbound and outbound), GUI, backend processes, strategy servers, Citrix servers and farms, network, and overall system health.
- Deployed and troubleshot Java-based algorithms, from order handling and automatic order management system (OMS) updates to customizing FIX tags (destination algorithms) for broker and strategy needs.
- Communicated with vendors and handled support requests for VMware, Oracle, Red Hat, Javelin, NYFIX, and NYSE.
- Responsible for security master issues for global markets, including corporate actions and IPOs.

Portware LLC https://www.portware.com
Technician Support Engineer *Oct 2006 – Present*

- Provided front-line FIX, trade, and application support for clients, for issues such as unacknowledged orders, order rejects, "don't know" trades (DKs), and fill pricing issues from other OMS and FIX connectivity vendors such as SunGard, MacGregor, Reuters, Bloomberg, Charles River, NYFIX, NYSE, ARCA, and INET.
- Monitored and troubleshot the FIX protocol through FIX logs and database queries for orders, execution reports, cancels, and cancel replaces.
- Configured market data adapters: Reuters RDF (Jdist, RMDS, P2PS, RFA), Bloomberg, Realtick, ComStock, IDC, and foreign exchange liquidity providers (BARX, UBS, EBS, and others).

Tradeware Global https://www.tradeware.com
Help Desk Technician – OMS Support/FIX Connectivity *April 2006 - Sept 2006*

Electronics Boutique https://www.ebgames.com
Assistant Manager *March 2001 – April 2006*