

Peter Evans

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Summary

A Software Engineer, currently focusing on building resilient distributed systems for big data. Passionate about software delivery, automation and reducing toil.

As technical lead for the Storage Systems team I am leading the design and development of Treasure Data's next generation storage optimisation pipeline to support streaming ingest. This is a complex migration from a legacy system to a new pipeline consisting of event streams, RESTful webservices, Pub/Sub message queues and autoscaling workers. Data integrity is paramount, and the solution is designed to be highly scalable and resilient.

My experience to date covers a wide range of technologies and languages, and projects that have utilised both private and public cloud infrastructures. I have experience in cloud technologies, authentication systems, container orchestration, serverless, databases, stream processing, API design, explicit infrastructure and site reliability. I am also experienced with working asynchronously on remote, distributed teams.

In my spare time I enjoy watching Formula 1 and working on personal projects. I currently maintain several popular GitHub actions such as create-pull-request (<https://github.com/peter-evans/create-pull-request>), used by over 50,000 public repositories as of March '22. I'm also the author of kdef (<https://github.com/peter-evans/kdef>), a declarative resource management tool for Kafka.

Experience



Treasure Data
Jan 2019 - Present

Principal Software Engineer / Technical Lead

April 2021 – Present

Storage Systems / Core Services

Technologies: Kotlin, AWS, PostgreSQL, Docker, Terraform, Kinesis/Kafka, Flink, RESTful webservices

- Leading the design and development of Treasure Data's next generation storage optimisation pipeline to support streaming ingest.
- Directly responsible individual (DRI) for a platform-wide project to deal with security concerns relating to internal authentication schemes.
- Involved in many cross-cutting projects and initiatives covering areas such as data ingestion, job processing by workers, release/delivery pipeline and infrastructure.
- Hold an additional responsibility as a Release Safety Advisor, tasked with improving the quality and safety of releases across Treasure Data's platform.

Key Project: Storage Optimisation Pipeline

- Created Terraform to manage the infrastructure of all components of the pipeline in multiple sites.
- Developed a feature to publish storage metadata to a new stream. This involved altering the schema of a critical SQL function, and careful rollout using Launch Darkly feature flagging.
- Created a new Flink service to handle the stream processing tasks of the pipeline. Involves aggregation, timed-events, and an SQS queue sink.
- Developed an auto-scaling worker service in Kotlin to consume SQS job queues. Processing involves S3 read/write operations and multiple API calls. Using retry and circuit-breaker patterns, message timeouts, and dead-lettering, the service is highly resilient to failure.
- Created several new endpoints in our metadata API service to support the pipeline and job orchestration. Involved schema changes to our PostgreSQL metadata store, and writing Docker-based integration tests.
- Collaborated with team members to upgrade the PostgreSQL metadata store using logical replication and DNS-based blue-green switch, achieving less than 60 seconds downtime (effectively zero customer impact).

Staff Software Engineer / Technical Lead

Jan 2019 – Mar 2021

Storage Systems / Core Services

Technologies: Kotlin, Java, Python, AWS, PostgreSQL, Docker, Terraform, Lambda, RESTful webservices

- Leading the design and development of Treasure Data's next generation storage optimisation pipeline to support streaming ingest.
- Involved in many cross-cutting projects and initiatives covering areas such as data ingestion, job processing by workers, release/delivery pipeline and infrastructure.
- Collaborated with SRE team engineers to launch a tool I created as a service for all engineering teams. The tool automates the rotation of EC2 instances in hundreds of clusters to allow service teams to safely comply with security and compliance policies.
- Hold an additional responsibility as a security vulnerability assessor, tasked with determining the severity of CVEs for Treasure Data's systems and recommending remediations.



Rakuten

Aug 2017 – Jan 2019

Solution Architect Technical Lead

Aug 2017 – Jan 2019

Software Service Enablement Department / Product and Technical Management Group

Technologies: Kubernetes, Docker, Cassandra, Azure, Google Cloud Platform, RESTful webservices, Spark Streaming, Kafka, Golang, Lua, Node.js, Python

- Led the architecture design for a multi-datacenter hybrid cloud deployed, enterprise wide, multi-tenancy API gateway platform based on Kong.
- Collaborated with architects from Rakuten's Membership Services to design authentication flows through the API gateway using a stateless slim token based on JWT.
- Leading the architecture for a log analytics platform with machine learning.
- Advise teams on a number of specialist areas including system architecture, API design, authentication, CI/CD and site reliability.
- Lead architect for the POC and internal test of Rakuten Coin, Rakuten's future cryptocurrency.
- Engaged in research and development of new technologies and services.

Senior Software Engineer Technical Lead

Aug 2016 – Jul 2017

EC Strategy Department / Backend Services Engineering Team

Technologies: Java, Spring Boot, RESTful webservices, Docker, Kubernetes

- Tasked with building a new development team to manage backend services for smart device applications.
- Engaged in research and development of new architecture and services to support future projects.

Software Engineer

Sep 2014 – Jul 2016

Emerging EC and Logistics Development Department / SmartFill Group

Technologies: C#, ASP.NET, Java, Spring

- Led the development of projects to extend the functionality of an order management service and refactor the systems to provide greater scalability and maintainability.
- The service is comprised of web applications, web service interfaces and batch processing systems. It required a good understanding of many different architectural patterns and technologies.
- Due to my involvement in establishing a new continuous integration pipeline I additionally took on an integration master role. This involved maintaining oversight of multiple source control branches of development and a complex chain of module dependencies to ensure seamless build integration.

Key Project: Continuous Integration Development Pipeline

Technologies: Git, TeamCity, Octopus Deploy, Jira, Powershell, C#

- Engaged in research and development of new architecture and services to support future projects.
- Proposed and undertook a project to overhaul the manual build and release processes in use by the

team. The project involved setting up a continuous integration build server and a release management server.

- Refactored various system components to achieve seamless build integration.
- Setup build and unit test automation allowing problems to be detected immediately and as a result increased the quality of releases greatly.
- Introduced an almost completely automated deployment setup that vastly increased the speed in which code changes could be released to staging and production environments.



Kingston Technology

2004 - 2013 · 9yrs

Programmer/Analyst

- Playing a key role within the UK distribution hub of the world's independent memory leader.
- Responsible for increasing the efficiency and productivity of the entire order fulfillment process through software development, and designing and implementing a number of mission critical systems
- Designing reusable software components, in addition to building services to support the development team and reporting requirements of departmental end-users.
- Attending UK and international meetings in California, Taiwan and China to demonstrate software, provide expert technical knowledge and facilitate project research.
- Effectively maintaining disaster recovery policies and procedures within the order fulfillment infrastructure.

Key Project: Quality Control and Freight System

- Leading an ambitious project to combine two mission critical systems into one streamlined system with a single client front end.
- Using C#.NET CLR SQL Assemblies and T-SQL transactions to manage complex data processes and integration with carriers FedEx, UPS and TNT.
- Designing and implementing a C# WinForms client based on n-tier architecture with an effective graphical user interface (GUI) to drive the new work processes.

Key Project: OrderFulfilment Explorer

- Designed and implemented a new intuitive C# WinForms application to streamline data efficiency and end-user operation during the order fulfilment process.
- Used T-SQL to collate vast relevant data from multiple servers and databases, enabling a comprehensive search capability.



Bluesoft, Ltd

2002 - 2003 · 1yrs

Programmer/Consultant

- Responsible for developing Client Information System (CIS) and ensuring server maintenance and security.
- Liaising extensively with clients through support visits to provide training and strengthen relationships
- Producing a new product, Helpa/CIS, which Bluesoft Ltd. now use and sell commercially.

Education

Aston University

Bachelor of Science (BSc), Computing Science · (2000 - 2004)

Sale Grammar School · (1994 - 2000)

Other details

Languages

English (Native) · Japanese (Professional Working)

Other

Driver; full clean Japanese driving licence