



# Financial Services Technical Architect and Development Manager

↗  Consultant	<u><a href="#">Paul Prae</a></u>
↗ Industry	<u><a href="#">FinTech</a></u> , <u><a href="#">Financial Services</a></u>
↗ Consulting Services	<u><a href="#">Solutions Architecture</a></u> , <u><a href="#">Technical Project Management</a></u> , <u><a href="#">Cloud Computing</a></u> , <u><a href="#">Fractional Chief Technology Officer</a></u> , <u><a href="#">Data Protection</a></u> , <u><a href="#">DevOps</a></u>

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Senior Support Engineer

Project Highlights

Data Collection and Modeling Microservices

Microservices for Web Crawling and Scraping

Disaster Recovery Planning and Data Protection Solution

Blockchain-Based Data Platform Architecture

Demand Forecasting of Healthcare Services

Financial Services Customers Served

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## About

Paul is an executive advisor, tech lead, and cloud platform architect who specializes in AI and data governance. He spent 15 years working at Microsoft, Amazon Web Services, Red Ventures, and Slalom Consulting delivering enterprise software solutions to Fortune 500 companies. Today, he owns and operates Hyperbloom, a consulting company and talent platform on a mission to bring self-sovereignty to independent contractors through equitable distributions of wealth. Paul is also a part-time tech lead and business development lead at the Translational Research in Neuroimaging and Data Science Center at Georgia State University.

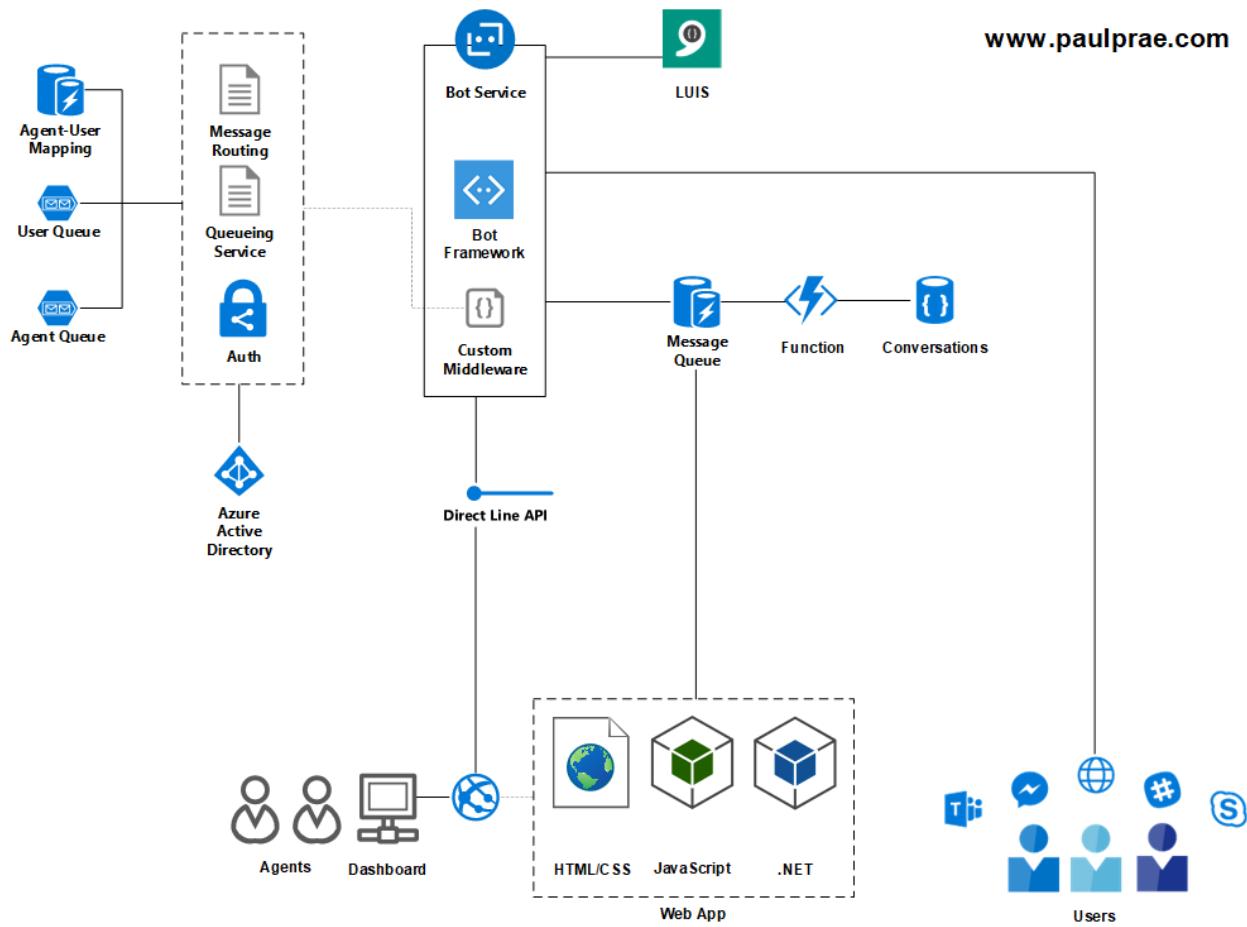
Paul's consulting services include:

- Acting as a Fractional Chief Technology, Data, or AI Officer.
- Business Development, Product Development, and Team Building.
- Cloud-Based AI, ML, and Data Platform Architecture.
- Data Governance, Protection, and Privacy Management.
- Leadership Coaching with a Focus on Self-Compassion and Emotional Awareness.



He's a curious and friendly person who loves working on meaningful challenges with wonderful people.

# Technology



- **Microsoft Azure:**

- AI - Machine Learning, Microsoft Cognitive Services, Language Understanding Service, Bot Service, Search, ChatGPT
- Compute - App Service, Virtual Machines, Scheduler, Functions
- Data - Excel, PowerBI, Storage, Cosmos DB, SQL Database

- **Amazon Web Services:**

- *AI* - SageMaker, Personalize, Comprehend, Textract, Forecast, Lex, DeepLens, DeepRacer, DeepComposer
  - *Compute* - Lambda, Step Functions, Elastic Compute Cloud
  - *Data* - Data Lake, Database Migration Service, DocumentDB, DynamoDB, Glue, Glue Databrew, Health Data Lake, Kinesis, Lake Formation, Neptune, QuickSight, Simple Storage Service, Simple Queue Service
  - *Networking* - Virtual Private Cloud, API Gateway, CloudFront, Elastic Load Balancing, Route 53, Multi-Tenancy
  - *Security* - IAM, Cognito, Config, CloudWatch, CloudTrail, Network Firewall, Web Application Firewall, Key Management Service, Certificate Manager, Okta Integration
- **Artificial Intelligence:** Evolutionary Computation, Knowledge-Based AI, Semantic Networks, Constraint Satisfaction, Regression, Decision Trees, Search, Responsible AI, Explainable AI
- **Natural Language Processing:** Conversational Interface Design, Entity Extraction, Intent Detection, Sentiment Analysis, Web Mining
- **MongoDB:** Atlas, Disaster Recovery Planning, Cybersecurity Auditing and Risk Mitigation, Role-Based Access Control Automation, Performance Monitoring, Back Up and Restore, Cross-Region Replication, Multi-Region Failover
- **Other Database Systems:** SQL Server, MySQL
- **Programming Languages:** JavaScript, HTML, Python, Bash, SQL, R, Java, Prolog, C#, PowerShell
- **Libraries and Frameworks:** Kubernetes, Apache Kafka, .NET, Pandas, NumPy, Scrapy, spaCy, BeautifulSoup, Natural Language Toolkit, Microsoft Bot Framework, Node.js, Express, Electron, React
- **Servers:** Apache HTTP, IIS, Linux, Windows Server
- **Collaboration:** Agile Software Development Methodologies, Data Science Life Cycles, Machine Learning Workflows, Docker, JIRA, Notion, Trello, Git, GitHub

## Relevant Experience

## Data Platform Architect

TReNDS Center - Atlanta, GA, January 2022 to Present

- Provide technical project management for COINSTAC, an open-source software suite that fosters collaborative, decentralized research that applies multimodal fusion approaches to neuroimaging and genomics data. COINSTAC offers data anonymity through differential privacy algorithms, so members do not need to fear Personal Health Information (PHI) traceback.
- Advise the leadership team on the feature roadmap, mission, and vision for the product.
- Focus on improving the team's communication and collaboration processes and tooling.
- Act as the team's Scrum master, defining and executing Agile methodologies.
- Architect and manage the cloud components to the system in AWS. Made improvements to decouple the system and better leverage managed services.

## Data Science and Engineering Lead, Founder

Hyperbloom - Buford, GA, January 2019 to Present

- Lead the Data Science and Engineering Practice Area and its go-to-market strategy to deliver cloud-based AI and data solutions to industries governed heavily by data protection and privacy laws.
- Train engineers and architects on how to be entrepreneurs and live the life they want to live. Teach them how to target high-demand, low supply markets and develop multiple income streams all while living a meaningful and fulfilling life.
- Recruit mission-driven people that specialize in building emerging technology.
- Partner with research organizations, technology vendors, and other consulting companies.
- Build decentralized, autonomous talent platforms and business infrastructure to support our mission to bring financial freedom to independent contractors.
- Support software developers as they incubate their technology products in our community.

# **Enterprise AI Solutions Architect**

**Amazon Web Services** - Atlanta, GA, August 2018 to May 2021

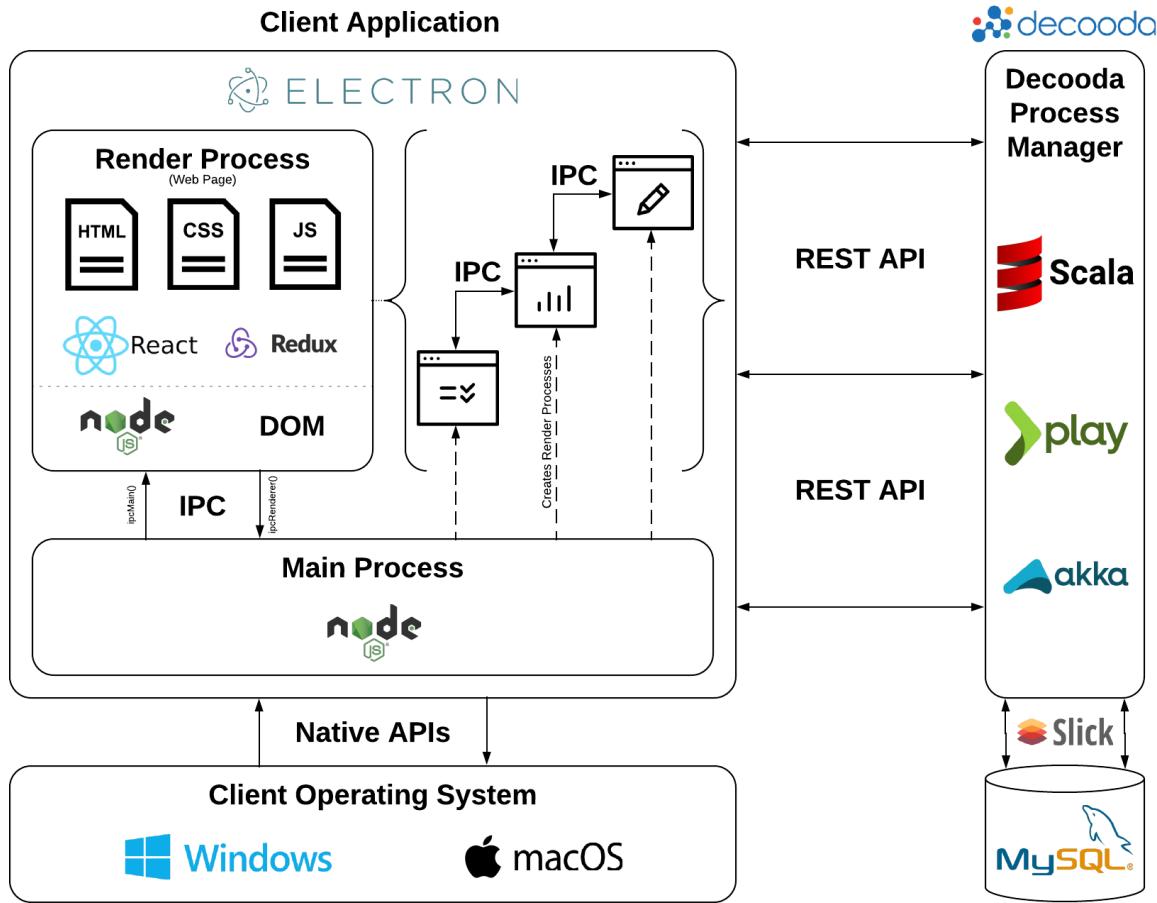
- Worked with existing and potential customers to architect and integrate their applications and services with the AWS cloud platform.
- Provided prescriptive guidance, best practices, and assistance in designing applications and services that are secure, scalable, reliable, and performant.
- Built deep relationships with executives and other leaders while assisting them with the definition and execution of technical and business strategies, including technical recruiting, go-to-market strategy, and cost management.
- Acted as a technical liaison between customers and the web service teams to provide customer driven product improvement feedback.
- Collaborated with professional services, training, and support teams to ensure customer success.
- Plan, led, and spoke at private and public meetings and events with diverse groups of stakeholders daily.

# **Senior AI Engineer**

**NeuroLex** - Atlanta, GA, January 2018 to August 2018

- Architected and developed distributed software applications, web services, and data pipelines that made voice computing accessible to everyone.
- Designed automated machine learning workflows that collect data, clean data, train models, and deploy models.
- Worked with executive leadership, researchers, and customers to design new features and products that delighted users, had a great technical foundation, were easy to support, and delivered on the key performance metrics and goals of the business.
- Collaborated weekly with a highly distributed, cross-functional team.
- Assured quality through test-driven development. I advocated for, and drove the implementation of, regression, functional, load, and integration testing.

# Senior AI Solutions Architect



**Decooda - Atlanta, GA, January 2018 to August 2018**

- Architected AI solutions that detect and predict human behavior. These solutions were cloud-first and built to scale with a focus on unstructured data.
- Designed next generation data science tools for the customer experience industry. I pioneered new products and features by bridging customer feedback back into product development.
- Led client service delivery operations for our engineering and data science teams. I established processes and tooling to improve the efficiency and effectiveness of the organization.
- Acted as the technical lead and project manager on client-facing projects.

- Managed diverse teams of data scientists, software engineers, and customer experience experts as we delivered quality solutions on aggressive timelines.
- Executed multiple agile software development and data science process life cycles in tandem.

## **Senior Support Engineer**

**Microsoft - Charlotte, NC, July 2012 to March 2014**

- Supported the full systems development life cycle of hundreds of high business impact web applications, web services, and server groups in environments with tens of thousands of users.
- Acted as the primary contact where I delivered advanced technical troubleshooting support and problem resolution to Fortune 100 customers. I was most often requested to assist during critical situations such as deployments, upgrades, installations of hotfixes, migrations, restorations, and to recover from a substantial loss in business functionality.
- Demonstrated consistent success collaborating with international teams on projects that involved dozens of stakeholders.
- Planned for and improved solutions regarding server performance, disaster recovery and availability, and infrastructure capacity.
- Created functional design specifications, requirements documents, implementation plans, and governance plans.

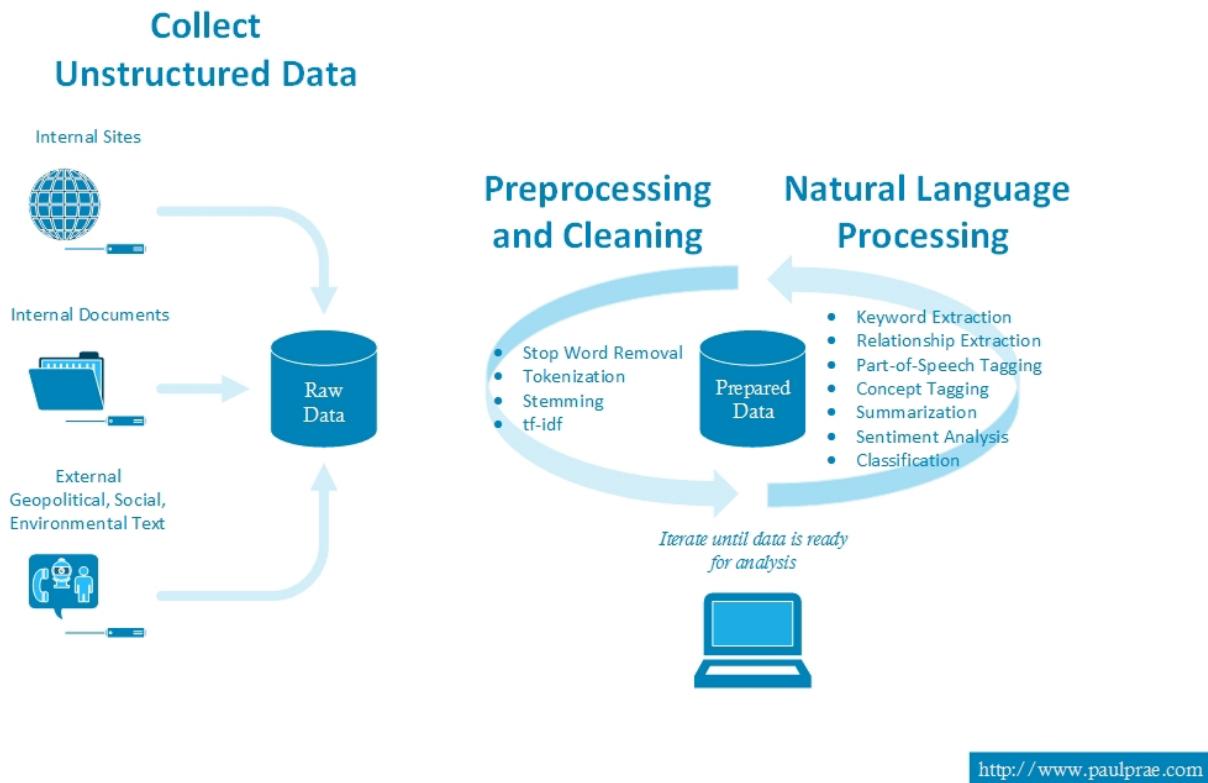
## **Project Highlights**

### **Data Collection and Modeling Microservices**

Co-architected a series of microservices that create, evaluate, and deploy machine learning models. This distributed system was built with Python, Docker, Kubernetes, and Kafka on the Google Cloud Platform. Led the development of a microservice written in Node.js that collects and processes audio. Results of the processing are sent to a unified logging system built on Kafka.

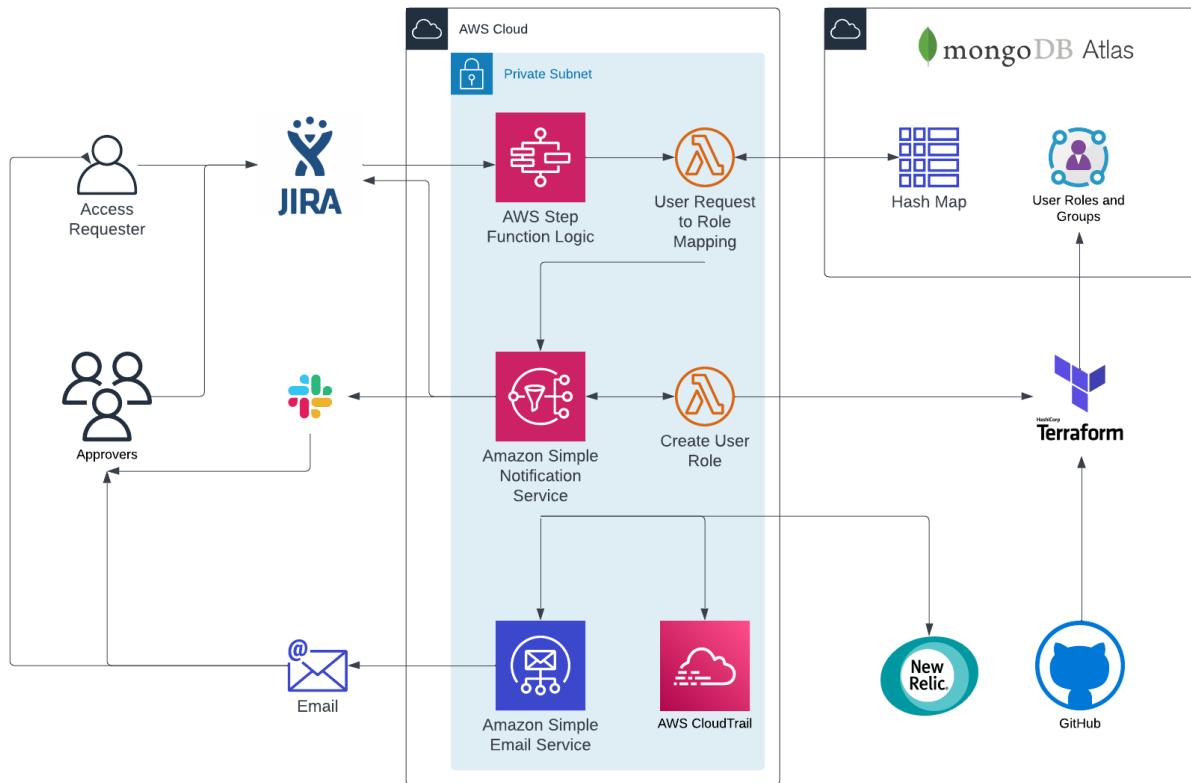
# Microservices for Web Crawling and Scraping

## High-Level Text Mining Process



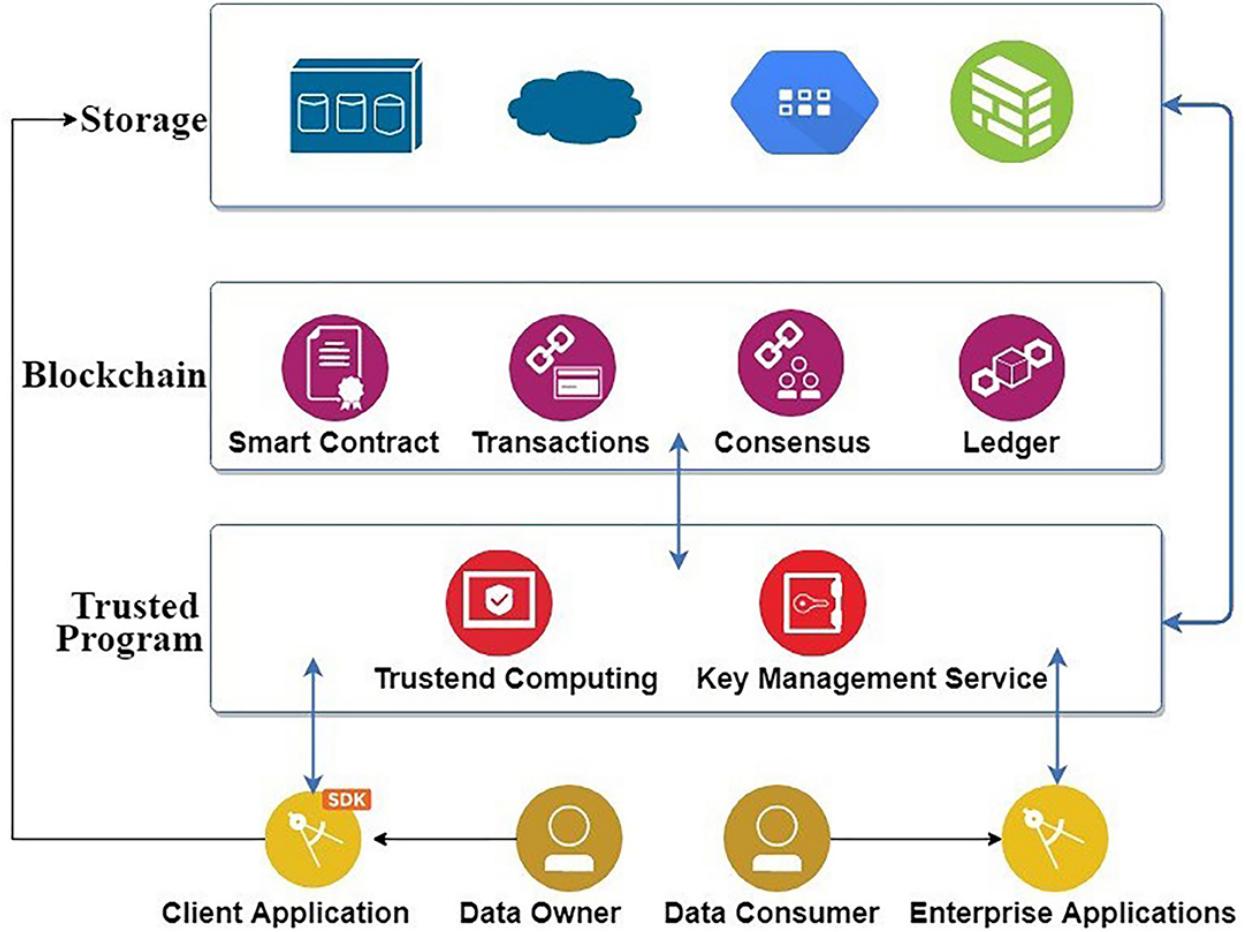
Using Python and Kafka, I built a series of highly scalable microservices that could extract data from almost any popular news site. This unstructured data was then cleaned so it could be easily consumed by our text analytics platform. This system allowed our clients to follow industry trends and gain insights about both their customers and competitors. For Principal, the data was used to influence investment decisions and to predict earnings surprise.

## Disaster Recovery Planning and Data Protection Solution



Architected disaster recovery solutions and governed data for clinical trial software that helped more than 10,000 research sites in 45 countries manage their documents, data, and workflows. The platform also provides remote access so sponsors and contract research organizations (CROs) can collaborate with their sites around the world. The platform's users performed 5.5 million remote monitoring activities each month.

## Blockchain-Based Data Platform Architecture



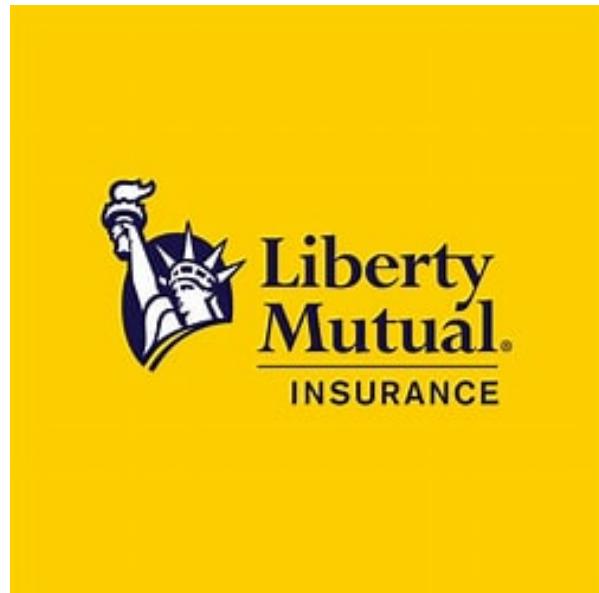
Applied blockchain technology to securely and privately exchange data. We designed a system to facilitate and verify a data life cycle using smart contracts. The life cycle identified, tracked, and secured data with event logging in place. We designed it to meet global regulatory requirements, data protection laws (CCPA, GDPR, and HIPAA), and privacy frameworks (like FAIR). We made sure it was interoperable by applying standards such as CDISC, SDTM, ADaM, and HL7.

## Demand Forecasting of Healthcare Services

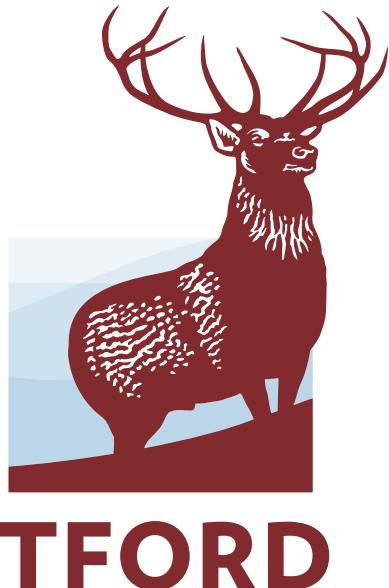
In order to reduce costs, optimize staffing, and support the budgeting process, we predicted demand for behavioral health crisis services in dozens of facilities across the state of Georgia. We integrated data into a data warehouse from several previously siloed systems. While performing our analysis for this project, we also helped the organization improve their data governance and data science processes. It was built on Microsoft Azure leveraging SQL Database, Excel, and Power BI. We delivered business

intelligence reports, interactive dashboards, technical documentation, presentations, and training to diverse audiences spanning executive leadership, nurses, behavioral staff, software developers, and business analysts.

## Financial Services Customers Served



**INTERNATIONAL MONETARY FUND**



THE  
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