JASON BAK

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EXPERIENCE

HubSpot | Senior Software Engineer – Infra Costs   Jan '23 – Jan '25
Worked within Platform Infrastructure, focusing on AWS cost optimization and efficiency initiatives, managing **$210MM** in annual cloud spend. Drove significant cost reductions across the organization.
· Led initiatives to enhance internal cost dataset, resulting in improved data granularity and accuracy that enabled precise **attribution of $56MM** in annual costs across the organization.
· Drove improvements for our AWS resource optimization system to include more resource types and implemented automated cleanup, resulting in an additional **$1MM reduction** in infrastructure costs.
· Collaborated across infrastructure and product teams to address cost management issues (waste, inefficiency, runaway costs, "unexplained" costs), improving cost awareness and **reducing >$2MM of costs.**

Software Engineer – Infra Costs   Apr '20 – Dec '22
· Led design and implementation of an automated AWS resource optimization system that **eliminated >$1MM** in infrastructure costs by shutting down unused resources & adjusting capacity for underutilized resources.
· Attained **>99% AWS resource cost coverage** by architecting enterprise cost tag management system across top-costing resource types. This is the basis of our cost dataset + alerting and optimization systems.
· Scoped and architected cost alerting system as mentorship project for co-op engineer, providing technical guidance and timeline planning. System has **prevented >$1MM in runaway costs**.
· Architected and built a centralized EC2 metadata service to standardize instance data retrieval, eliminating redundant code paths and reducing system maintenance complexity.

Intuit | Software Engineer Intern – Data Platforms   Jun '19 – Aug '19
· Built a full-stack Amazon Machine Image rotation feature for an internal data infrastructure platform, enabling automated cluster management across multiple AWS accounts and reducing manual intervention.

Amazon | Software Development Engineer Intern – AI Labs   Jun '18 – Aug '18
· Enhanced anomaly detection by implementing a memory-optimized feature for the Random Cut Forest algorithm library to capture temporal context in time-series data through efficient buffer management.
· Developed Python and Java bindings for C++ libraries using pybind11 and JNI, ensuring seamless integration of advanced machine learning features into user-facing APIs.

PROJECTS

Analysis of my personal journal
· Analyzed my personal journal of four years (350+ pages) to identify trends that promote happier writing, which may be correlated to a happier life!

Knowledge graph of the 2017 political landscape
Received overall 2nd place ($1024) at HopHacks Spring '17
· Streams news articles in real-time and tags related entities. After constructing knowledge graphs, hidden connections between businessmen, politicians, etc. are made accessible via the Nexus API and web client.

EDUCATION

Carnegie Mellon University | B.S. in Statistics and Machine Learning   Dec '19
Minor in Computer Science
TA: Intro to Machine Learning, Data Structures; RA: Institute for Software Research (Machine Learning)

SKILLS

Proficient Java, Spark, SQL, Maven, Spring Boot, AWS (EC2, Athena, SQS, EventBridge, S3), Grafana, Git

Familiar Python, C, C++, C#, R, React, Kafka, ElasticSearch, Flask, Angular2, JavaScript, HTML/CSS

HOBBIES

· hot yoga, long-distance running, tennis, cycling, adventure photo/videography, daily journaling