

Andrew Dykstra

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EDUCATION

Northeastern University

September 2021 – May 2025

Khoury College of Computer Sciences, Candidate for Bachelor of Science - Computer Science

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Design, Fundamentals of Software Engineering, Computer Systems, Artificial Intelligence, Programming Languages, Logic and Computation, Mathematics of Data Models

SKILLS

Languages: Python, Go, Java, TypeScript, JavaScript, C#, C, C++, SQL, PHP, HTML, CSS, YAML, Bash

Technologies: Docker, React, React Native, GraphQL, REST, Slack, Confluence, Java Discord API (JDA)

Software and Tools: Kubernetes, AWS (EC2, Lambda, S3, Cloudfront, Aurora, Dynamo DB), Prometheus, Grafana, Honeycomb, Git, Jenkins, Argo CD, Graylog, Terraform, Pyrra, Firehydrant, jQuery, Node.js, MySQL, Flask, Junit, Chef, Vault, Opsgenie, Kyverno, Helm

EXPERIENCE & CERTIFICATION

CarGurus – SRE Team

January 2024 – June 2024, Cambridge, MA

Site Reliability Engineer Co-op

- Part of a 4-person team, **migrated site** from unicorn deployment in AWS to containerized service architecture in **Kubernetes**.
- Migration led to over **\$100,000 of annual savings** and reduced deploy and rollback time by **55%**.
- Mentored teams in creation of **SLOs** and **SLIs** using **Honeycomb** and **Pyrra**, improved SLI and SLO coverage from **12% to 88%**.
- Conducted **Locusts** distributed **load tests** on new site homepage to ensure resiliency before rolling out to incrementing site traffic.
- Developed a **containerized Python microservice** that **autonomously** syncs services between Showroom and FireHydrant, deployed on **Kubernetes**, and automatically assign severity levels for incidents.
- Shadowed **on-call for 3 months**: assisted in incident mitigation, wrote postmortems, and conducted **blameless postmortems**.
- Utilized **Rundeck** to deploy a **Python** script to autonomously parse through **AWS S3 logs** and cleanup logs older than 6 months through 5 buckets totaling **1.7 PB** of log data.
- **Automated GitHub** pull requests via **Golang** microservice to combine multiple automated changes into a singular PR.
- Developed **Python** script to generate user insights for Grafana dashboards via Grafana Ingress logs and Grafana API.
- Conducted mock incidents to **educate engineers** on incident management and mitigation process.

Technologies (2023-2024): Python, Go, Kubernetes, Docker, Java, AWS (EC2, SSM, Secrets Manager, S3, ELB), FireHydrant, Honeycomb, Grafana, Graylog, Terraform, Prometheus, Locust, Pyrra, Concourse (CI/CD), Vault, Opsgenie, Kyverno, Chef, Bash, Argo CD, Helm Charts, HTML, YAML, Agile Methodology

Site Reliability Engineer Co-op

January 2023 – June 2023, Cambridge, MA

- Identified root causes of incidents by utilizing **Honeycomb**, **Grafana**, and **Graylog** to analyze traces, metrics, and logs.
- Engineered more **observability** on incidents through **autonomous** monthly **incident reporter** using FireHydrant API, deployed via **Kubernetes** cronjob, tracking many metrics such as **MTTM & MTTR** per service to ensure **SLOs** were met.
- Utilized **Kyverno** policy engine to autonomously manage Kubernetes clusters via mutating and validating webhooks to act as guardrails preventing future incidents and simplifying scalability.
- Developed **chef** cookbooks to reduce EC2 deployed script machines' **memory usage by 99.8%** while maintaining observability.
- **Containerized** scripts and applications with **Docker** for seamless deployment in Kubernetes via Artifactory.
- Utilized **REST API** to automatically upload pdf formatted reports to Confluence and notify Slack channels upon upload completion.
- Leveraged **AWS Secrets Manager** and **Terraform** Vault to manage and **rotate API keys** and credentials in Kubernetes efficiently.
- Developed **Grafana dashboards** for observability on new and existing services and created alert thresholds integrated with **Opsgenie**.

AWS Certified Cloud Practitioner (CCP)

Date Issued: September 2022

PROJECTS

Federated Mastodon Server (AWS:ECS, Fargate, RDS Aurora, ElastiCache, S3, SES, Route53, CloudFront; Docker, Grafana)

- Designed and implemented robust architecture on AWS to ensure **high availability** and **scalability** for a social media platform with **80 active users** weekly.
- Implemented **Grafana** to create dashboards monitoring critical metrics and system performance, enabled issue detection and resolution.
- Leveraged **AWS CloudFormation** to **automate deployment** and management of cloud resources, ensuring consistent provisioning.
- Configured **ALB** and **ElastiCache** for improved load distribution and reduced latency enhancing user experience.
- Utilized **RDS** and **S3** for robust backup strategies securing user data and media files, allowed easy recovery and restoration.

Swipes4Sale App (JavaScript/TypeScript, Java, AWS, React Native, GraphQL)

- Developed an IOS and Android app for student-to-student university meal pass exchange due to the increase of leftover passes.
- Utilized React Native to develop cross-platform user interface with addition and deletion of posts, user profiles, and messaging.
- Leveraged GraphQL, instead of REST, to query AWS DynamoDB service in order to dynamically request multiple resources in each query without over-fetching and to reduce waterfall requests, thus allowing scalability.
- Conducted an acceptance test with 155 students at Northeastern University and 93% said they would use the app upon release.