MICHAEL BYCHKOWSKI

Web Developer | Platform Engineer

CONTACT

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EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY
Master of Science, Structural Engineering
August 2016

TEXAS A&M UNIVERSITY
Bachelor of Science, Civil Engineering
May 2014

CERTIFICATES

DELOITTE CLOUD NATIVE GUILD – APPRENTICE (AWS)
Deloitte
February 2021

SECURITY+
CompTIA
November 2020

CKA: CERTIFIED KUBERNETES ADMINISTRATOR
The Linux Foundation
October 2020

AWS CERTIFIED SOLUTIONS ARCHITECT – ASSOCIATE
Amazon Web Services Training and Certification
July 2019

CODING BOOT CAMP PROFESSIONAL CERTIFICATE
The George Washington University
May 2018

WORK EXPERIENCE

ECS FEDERAL

Kubernetes Administrator   **June 2021 – Present**
- Automate RabbitMQ deployment into develop, staging, and production clusters with Jenkins pipeline
- Architect/Plan migration away from OpenShift v3 to using lates version of Kubernetes

```
OpenShift / Jenkins / RabbitMQ / Azure DevOps / AWS
GovCloud
```

DELOITTE

MLOps Engineer   **July 2020 – June 2021**
- Design, engineer, and implement a platform to accelerate the machine learning lifecycle that bolsters Deloitte's AI/ML offerings
- Engineer and implement transparent and ethical AI pipeline processes for the platform
- Create a model API "buildpack" to serve popular model framework binaries as a REST API that are deployed with serverless containers using Knative
- Integrate platform with Azure Active Directory tenant for SSO for internal employees using OpenId Connect
- Implement GitOps via ArgoCD to manage model workloads and platform specific applications

```
Kubernetes / Kustomize / Helm / Istio / Kubeflow
Pipelines / Knative / MinIO / ArgoCD / Jupyter
Notebooks / Elasticsearch, FluentD, Kibana / Amazon
ECR, EKS, & Route 53
```

Lead Developer   **July 2020 – June 2021**
- Lead small developer team to build a data card catalog service for DoD client to discover available datasets on client's AI/ML cloud platform
- Design and engineer an AI/ML marketplace for DoD client to discover published models on client's AI/ML cloud platform (ongoing development)
- Mentor junior developers on teams by holding weekly coding blocks to assist in blocked agile sprint tickets
- Secure API and UI routes using Keycloak's SDK based off realm role autherization

```
Node.js / Express / JavaScript / React / PostgreSQL
/ Docker / Keycloak / Amazon RDS
```

DevOps Engineer   **March 2020 – January 2021**
- Maintain multiple deployments for award-winning Deloitte asset, HealthPrism, that helps mobilizes experts, data, and technology to focus resources to fight against U.S. health epidemics
- Lead tech and architectural discussions for the Certified to Sell process, which allowed Deloitte to take the HealthPrism to market
- Continuously rollout new versions of applications using GitOps and Helm manifests
- Create CI pipelines using Argo workflows with GitHub webhooks to continuously integrate code

```
Kubernetes / Istio / Argo / ArgoCD / Helm / Harbor
/ StatusCake / Keycloak / GitHub / GCP GKE, BigQuery,
Spanner, & Cloud Storage
```

Deloitte

Full-stack Developer   March 2020 – January 2021
- Develop new features for both React based UI and Python GrahpQL server for ward-winning Deloitte asset, Health-Prism, that helps mobilizes experts, data, and technology to focus resources to fight against U.S. health epidemics
- Improve data pipeline by switching backing database to utilize GCP's data warehouse service BigQuery
- Revamp React to UI for improved 508 compliance and color pallete

```
React  /  Redux  /  Apollo  /  Mapbox  /  Material-UI  /  Vega & D3.js  /  Python  /  Flask  /
GraphQL & Graphene  /  GCP BigQuery
```

Front-end Developer   Aug 2019 – March 2020
- React developer on MissionStax, Deloitte's Enterprise Analytics Mission Systems microservice offering
- Integrate various Python backed microservices to the client layer with modular and reusable React components

```
React  /  Material-UI  /  Python  /  PostgreSQL
```

Front-end Developer & Data Analyst   Aug 2018 – Aug 2019
- Develop a web-based dashboard to visually display client's fuel chemistry data using D3.js chart library
- Design new charts using Sketch to help visually display clustering techniques to discover new insights on fuel data

```
HTML  /  CSS  /  JavaScript  /  D3.js  /  Sketch  /  Python  /  Flask
```

Hinman Consulting Engineers

Physical Security Consultant   July 2016 – Aug 2018
- Develop and maintain in-house software written in C# used to determine the proper anti-ram barrier for large scale infrasctucture projects
- Utilize the Unity game engine to prove out a proof of concept to asses risk of an active shooter scenarios
- Perform calculations to determine column and beam sizes based off finite elements methods and core structural dynamics to evaluate blast and hazardous loads

```
LS-DYNA  /  SAP2000  /  Autodesk Revit  /  MATLAB  /  Unity  /  C#
```

Penn State University

Research & Teaching Assistant   Aug 2014 – July 2016
- Design and carry out physical testing of anti-ram barriers for U.S. Department of State
- Prepare lectures and review sessions to over 100 students both in-person & online

SKILL DEVELOPMENT PROJECTS

Deloitte

MLOps on AWS with Kubeflow and Amazon SageMaker
- Complete capstone project for the Deloitte Cloud Native Guild (apprentice level) using AWS sandbox cloud environment
- Deploy instance of Kubeflow pipelines into an EKS cluster and connect to Amazon SageMaker components
- Continuously train on new dataset upload to Amazon S3 bucket and deploy with Amazon Sagemaker

```
Kubernetes  /  Kubeflow Pipelines  /  Amazon SageMaker  /  Amazon S3 & EKS  /  AWS CodeBuild
```

Personal

Edge Deployment of Machine Learning Workloads
- Host Kops cluster hosted in AWS
- Deploy applications and machine learning workloads to a K3s edge cluster using Inlets-Pro as a proxy to create a tunnel from Kops cluster to K3s cluster
- Continuously deploy with GitOps via ArgoCD to edge cluster to run off of configured Intel Neural Compute Stick

```
Kubernetes & Kops  /  K3s  /  Inlets  /  ArgoCD  /  Docker  /  GCP Compute Engine  /  Linux  /
Raspberry Pi Model B  /  Intel Neural Compute Stick 2
```

Personal Blog & Website
- Host a headless CMS blog on Amazon S3 and managed by Ghost
- Build a headless JAMStack with React & Gatsby
- Host using serverless architecture with Amazon S3 and serve using Amazon CloudFront
- Create a CI/CD pipeline with AWS CodePipeline and CodeBuild

```
GatsbyJS  /  GraphQL  /  Ghost Blogging Platform  /  Amazon S3, CloudFront, & Route53  /  AWS
Lambda, CodePipeline, & CodeBuild
```