# Whitney Zoller

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## Experience

**Principal Software Engineer**, Ginkgo Bioworks / Biosecurity – Remote                 March 2021 – present

- Engineering lead on Infrastructure team
- Responsible for the build out of all things AWS: compute (Kubernetes on EKS, ECS/Fargate, Batch, Lambda), databases/storage (RDS, DynamoDb, S3), permissions (IAM), networking (VPC, Route53, subnets, security groups)
- Built / maintained data lake (Snowflake + dbt) for Biosecurity data team, including Change Data Capture replication pipelines (using AWS DMS) for OLTP to OLAP replication
- Built and maintained Biosecurity CI/CD infrastructure using self-hosted (AWS) Github runners
- Responsible for AWS infrastructure migration from AWS CDK to terraform  Migrated observability infrastructure from New Relic to Grafana realizing an 85% reduction in cost
- Drove AWS infrastructure cost-saving initiative resulting in 40% reduction of cost annually

**Principal Software Engineer**, Cigna – New York, NY                 March 2019 – Feb 2021

- Building infrastructure to support and accelerate the development and deployment of machine learning models on AWS
- Extend and maintain systems for data science team to standardize and accelerate model development/deployment including: scalable notebook infrastructure for data exploration, feature development, data cleaning (PySpark on AWS EMR), ML model pipelines for training on AWS Sagemaker
- Perform ML model review, providing feedback on both operational/code issues and model quality to data sciences team
- Provide mentorship to business analysts interested in training in ML practice/theory/tooling
- Advocate for patient privacy: education and demonstration on the application of differential privacy in dataset querying and the generation of synthetic data

**Principal Software Engineer**, Oath / Verizon – New York, NY                 March 2017 – July 2018

- Technical lead in the Video Intelligence team, leading a team of two engineers and one computer vision research scientist, with the goal to produce systems to ingest, analyze and augment videos with "lifelike" ads
- Designed and implemented a computer vision pipeline used for video augmentation tasks built on AWS batch
- Deployed open source (facebookresearch/detectron2) image segmentation CNN model for video frame advertisement augmentation handling object occlusion
- Designed a protocol for client-side augmentation, handling ad-occlusion, and produced a proof of concept in collaboration with iOS and Android teams
- Engineering lead on video ranking project optimizing for video engagement in various Yahoo media content feeds
- Tech lead on video ranking project optimizing for video engagement in various Yahoo media content feeds
- Member of Video Org. Architecture group as representative of the Video Intelligence team; responsible for providing architectural feedback on new projects and determining road maps for ML projects within the Video Organization
- Member of the Interviewing Excellence team tasked with standardizing recruitment and interviewing procedures

**Principal Software Engineer**, Yahoo! Inc. – New York, NY                 Jan 2016 – March 2017

- Architect and technical lead of the TradeIT integration enabling linkage with brokerages and equity/FX trading directly from the Yahoo Finance iOS or Android applications. This product provided a diversification of income streams from pure ads to trade commissions
- Designed and implemented a low latency content de-duplication system for Yahoo Finance's streaming content ingestion system using Apache Storm
- Core contributor to Yahoo Finance content APIs (Java)

**Senior Software Engineer**, Yahoo! Inc. – New York, NY                           Feb 2014 - Jan 2016
- Sole back-end engineer working on a Yahoo "celebrity" (iOS) app that was designed, built and never released
- Designed and implemented RESTful APIs in Node.js for mobile clients enabling reading and interacting with novel forms of content (quizzes, interactive photo "stories")
- Built CMS in Node.js for creating novel forms of content which enabled user interaction

**Software Engineer**, Wander (acq. by Yahoo! Inc.) – New York, NY                           2012 - 2014
- Served as the lead back-end engineer for "Days", a journaling social media app acquired by Yahoo in 2014, independently architecting and maintaining the entire server infrastructure
- Systems built: all client facing APIs (in Ruby on Rails) consumed by the Days iOS app including user account login flows, account settings, image uploads, GIF creation, "story" annotation, friend "graph" actions; persistence and data modeling using MongoDB; image processing pipelines for cropping/resizing/stitching using FFmpeg; internal CMS with web front-end for content curation, user debugging, and bulk messaging
- server code had > 95% unit/integration test coverage

**Software Engineer**, Rent the Runway – New York, NY                           2011
- Responsible for software systems enabling order life cycle tracking, and management
- Designed and implemented a garment allocation system which reduced average order picking time and increased visibility into problem orders
- Designed and implemented an internal employee authorization scheme enabling warehouse activity audits

**Software Engineer**, Knewton Inc. – New York, NY                           2008 - 2011
- Collaborated with staff Psychometrician on the collection and analysis of performance data pertaining to new assessment items for use in Computer Adaptive Testing (CAT)
- Designed and implemented RESTful APIs in Ruby on Rails application for student course schedules
- Core contributor to proprietary content management system
- Wrote mathematics content for GMAT, and logic games for LSAT

## Education

**Georgia Tech**, MS Computer Science                           May 2019

**Columbia University**, BA Mathematics                           May 2007

**University of California, Berkeley**, BA Philosophy                           May 2004

## Extras

**Patent: Computerized System and Method for In-Video Modification**                           Issued May 24, 2022
- Describes a novel process for modifying video frames with personalized ads such that they appear part of the natural scene
- US 11341744