# NICHOLAS SEIDL

## Computer Vision - Software Engineer

I have experience in industry working a variety of roles. I'm currently working on a live object detector (YOLO) for Wayfair (Summer 2019). In the Spring, I worked on failure analysis of Apple's Neural Face Detector, amongst other computer vision and machine learning functions. In 2018, I built two web services at Apple: one for content analysis and retrieval and one for hosted image comparisons and history.

I'm currently looking for a full time position on a camera/imaging/photos team focused on **computer vision**.

## Contact

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github.com/nseidl

## Languages

Python, Java, Javascript, C, C++, Swift

## **Software**

Tensorflow, TensorRT. Keras, TFLite, CoreML, EC2, Tornado, Flask, React, Typescript, Redux, Node, S3, Postgres, Elasticsearch, MySQL, REST, Docker

### Courses

Algorithms and Data Structures Artificial Intelligence Linear Algebra Distributed Systems ML and Data Mining Object Oriented Design Computer Systems Programming Languages Probability and Statistics

#### **Interests**

Board Member of Pool Club, Photography Club, Basketball, Hiking

## **Experience**

## Wayfair LLC

Computer Vision - Software Engineer

Boston, MA

Summer 2019

- Implement YOLO(v3) neural network for object detection on custom class domain
- Tune for live on-device detection with preprocessing, quantization, and pruning
- Optimize training and inference with CUDA, cuDNN, TensorRT, and Tensor Cores

#### Apple Inc.

Camera & Photos CVML - Failure Analysis

Cupertino, CA Jan. 2019 - June 2019

- Analyzed and visualized failures of face detector to target specific aggressors and guide development
- Designed and automated failure analysis pipeline: inference → detection evaluation → failure analysis → visualization
- Curated datasets for different uses with custom model in the loop processes
- Managed data collection, selection, and annotation (guidelines, spec, and quality)

#### Apple Inc.

Cupertino, CA Jan. 2018 - Aug. 2018

IMG QE - Full Stack Software Engineer

- Content Collection: audio/image/video/stream analysis and retrieval
  - Integrated blob (Amazon S3) and metadata (Postgres) stores to serve content
  - Leveraged Python and Tornado for asynchronous and non-blocking REST API
  - Extracted attributes from audio, image, video, and stream content (Swift)
- Image Comparisons: image comparison web service with history
  - Rewrote backend in Flask; expanded API for frontend and hosted comparisons
  - Modularized backend so different comparison algorithms can easily be added

## UnitedHealth Group - Optum Technology

Boston, MA

TDP - Backend Software Engineer

Summer 2017

- Engineered pluggable Blockchain platform; adapted to bank transaction reconciliation and facilitation (big data)
- Designed, implemented, optimized backend and middle-tier pipeline (Python, Bash): MySQL → .csv → JSON → Elasticsearch → Blockchain → Hash Enforcer
- Leveraged Docker and Openshift for rapid deployment of system infrastructure
- Created Shark Tank presentations bi-weekly: demo, business case analysis

## **Education**

**Northeastern University** 

Bachelor of Science in Computer Science Khoury College of Computer Sciences

Sep. 2015 - Dec. 2019

GPA: 3.5 / 4.0

Boston, MA