# Austin T. Crain

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## WORK EXPERIENCE (2013-2020)

**Google Cloud** **11/2021-Present**

Machine Learning Engineer

- Developed policy intelligence tools to help administrators manage Google Cloud operations with ML recommendations
- Researched metrics to standardize training pipeline and compare different versions of the same ML model
- Implemented a *distributed* file system to increase resilience to hardware failures and reduce overall dependencies
- Researched improvements to the current deep learning production model, including feature selection, hidden layers, and output metrics to improve speed performance and reduce errors related to false positives.
- Worked with Product Manager to integrated new services with production ETL pipeline for sustainability
- Mentored new Googlers, introduced them to the engineering environment, and guided them through first 3 months

**Warner Media** **5/2020-11/2021**

Machine Learning Engineer

- Developed an end-to-end workflow to generate predictions on movie releases, revenue, and viewership.
- Extracted Age, Gender, and Ethnicity from images by using a CNN designed using *Tensorflow* based on *VGG16*
- Experimented with parameter optimization using *AWS Sagemaker* with Bayesian optimization to reduce gride search
- Created a prediction engine to generate forecasts, utilizing *GPU*, *RAPIDS*, and *DASK* to create parallelization
- Classified new video clips meta data according to popularity and performance using *Gaussian Mixture Models.*
- Collaborated with Data Engineering to integrate services with main ETL pipeline using Python, *Docker*, *S3*, and *Athena*

**Centene Corporation** **8/2019-3/2020**

Machine Learning Engineer

- Developed model to predict potentially fraudulent authentication requests using *SVM* and *Random Forest*
- Collaborated with product managers to design secure ETL pipeline and expand database API
- Reduced manual process using *Python* scripts uploaded to *AWS EC2* to automate routine tasks
- Expanded dashboard to communicate performance and highlight trends clearly to key stakeholders

**University of California, San Diego** **4/2017-9/2017**

Machine Learning Internship

- Developed feature and data pipelines for object detection machine learning model called *YOLO*
- Work together with agile team to implement *YOLO* algorithm with real-time response in *PyTorch*
- Collaborated with the robotics team to extract image data and run validation model

**Intel Corporation** **4/2013 – 9/2016**

Software Engineer

- Developed debug tools to make error messages readable and triage them to the suspected OS module
- Isolated software and hardware failures on Intel Security and Manageability Engine.
- Interacted with customers at workshops to replicate failures and recommend fixes
- Worked with international development teams to push code fixes and architectural changes

## EDUCATION

- **University of California, San Diego** **Sept 2016 – Sept 2018**
  Master of Science in Computer Science Focus: Machine Learning
- **Penn State University** **Sept 2011 – Dec 2014**
  Bachelor of Science in Electrical Engineering *Schreyer's Honor College Scholar*

## SKILLS

**Tools**: C/C++, Python, SQL, Docker, AWS, GCP, Java, CUDA,

**Packages**: Scikit-Learn, NumPy, Pandas, TensorFlow, PyTorch, GIT, Jupyter Notebook, Microsoft Excel

**Machine Learning**: Regression, K-NN, K-Means, Decision Trees, Boosting, PCA, CNN, RNN