Mikel Polena \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**EDUCATION**

Bachelor of Science in Computer Engineering, Illinois Institute of Technology 2013 – 2016

**COURSEWORK**

Digital Circuit Design Discrete Math and Algorithms Computer Architecture Design

Computer Networks Inter-Professional Projects Microcomputers

Signals and Systems Systems Programming Operating Systems

VLSI Design Modern Physics Database Organization

**SKILLS**

**Languages:** Python, C, C++, SQL, JavaScript, Clojure

**Tools:** Selenium, REDCap, Git, vim, sed, awk, tmux, venv, VS Code, Jupyter, Power BI

**Python libraries:** Numpy, Pandas, Scikit-Learn, Keras, Pytorch, OpenCV, Tensorflow and others

**C++ libraries:** STL, Boost, OpenMP

**Algorithms**: Backpropagation, Linear and Logistic Regression, Time Series Analysis

**Databases**: PostGRES, Oracle, SQL Server

**Github:** <https://github.com/mpolena>

**EXPERIENCE**

**Python Developer / Data Analyst –** *CCTS BioInformatics Core, UIC Chicago, IL* Feb 2020 – Present

* Perform clinical data extraction from EPIC and Cerner EHR systems to assist stakeholders in various research projects/studies that provide an improved understanding of healthcare phenomena. (medication effects, cohort studies, etc.)
* Build and maintain common data models that enable multi-institutional research. (PCORI, OMOP, CAPRICORN)
* Develop, perform and maintain ETL processes used for building clinical data models containing millions of rows for a variety of clinical domains such as Labs, Diagnosis, Medications, Vitals etc. by using a combination of skills including python, SQL, C, and algorithmic problem solving in a diverse set of computing environments.
* Contribute on projects and scientific research papers by providing insights and statistical analysis on use of computational, machine learning and deep learning models that seek to improve patient outcomes.
* Design and maintain an ETL process for a common data model that facilitates COVID-19 research.

**Python Developer / Data Analyst –** *Shirley Ryan AbilityLab - Chicago, IL* May 2019 – Feb 2020

* Consolidated multiple complex data sets in order to create data repositories that serve as the foundation for advanced analytic models used throughout the institution.
* Designed tools that automated data collection and eliminated manual data processes.
* Used multiple APIs to successfully automate data migration from different sources into REDCap, a secure HIPAA compliant web application used for building and managing online surveys and databases.
* Acted as Interim REDCap Supervisor/Administrator overseeing user access requests, approval of in production project changes and addressing ad-hoc implementation challenges.
* Doubled number of REDCap users by migrating two Clinical Neuroscience Research Registries, improving data processes and providing better usability and data consistency.
* Uncovered trends, patterns, correlations and other relationships in medical health records to deliver actionable insights that improve patient care.
* Collaborated with stakeholders to tune models and interpret outcomes in order to make them suitable for decision support at senior and executive management levels.
* Performed ad-hoc analysis on patient satisfaction, operations management and safety related events.
* Designed complicated SQL queries that continually pull data from the Enterprise Data Warehouse and present it in dashboards that provide better visualization and assist in data driven decisions.

**ACADEMIC PROJECTS**

**STEPS** – Solutions That Enable Phone Security was a multilayer security solution concept that protected users in case of smart device theft. STEPS was developed in collaboration with four other students as an Inter-professional academic project and was selected among twenty other projects to be presented in front of the **FCC Technical Advisory Council** **meeting Dec. 2014 - Washington D.C.**

**DATA SCIENCE & MACHINE LEARNING BACKGROUND**

**Coursera Certification/Completion Date**

* Python Curriculum (four courses) – University of Michigan March 2017
* Machine Learning – Stanford University, Prof. Andrew Ng June 2018
* DeepLearning.ai – Stanford University, Prof. Andrew Ng
  + Course 1: Neural Networks and Deep Learning August 2018
  + Course 2: Structuring Machine Learning Projects August 2018
  + Course 3: Improving DNNs: Hyperparameter Tuning, August 2018

Regularization and Optimization

* + Course 4: Convolutional Neural Networks September 2018
  + Course 5: Sequence Models September 2018
* AI for Medical Diagnosis March 2020

**NVIDIA Deep Learning Institute**

* Deep Learning Fundamentals for Computer Vision August 2018
* Modeling Time Series Data with RNNs in Keras April 2019

**Intel AI Academy**

* Deep Learning 501 September 2018
* Time Series Analysis February 2019

**LinkedIn Learning**

* Building Tools with Python April 2020
* Elasticsearch Essential Training June 2020
* GraphQL Essential Training July 2020

\**References available upon request*