# Madison Dimaculangan

Austin, TX | madxdimac@gmail.com | GitHub | LinkedIn | Medium

## CAREER SUMMARY

Data scientist and former product development engineer with over ten years of experience in the semiconductor industry. Eager to translate data science techniques and technologies learned to a professional setting and contribute to organizational and product success.

## TECHNICAL SKILLS

**Languages**

- Python
- SQL
- Java
- Ruby
- Perl
- C++
- HTML/CSS
- JavaScript

**Technologies**

- NumPy
- Pandas
- MatPlotLib
- Seaborn
- Scikit-Learn
- PySpark

**Techniques**

- Bayes Theorem
- A/B Testing
- Significance Testing
- Experiment Design
- Exploratory Data Analysis
- Synthetic Minority Over-Sampling TEchnique
- Dimensionality Reduction
- Cross-Validation

**Machine Learning**: Supervised and Unsupervised Learning Algorithms

- Naive Bayes
- Linear Regression
- Decision Trees
- Random Forest
- Gradient Boosting
- K-Nearest-Neighbor
- Support Vector Machine
- K-Means
- Hierarchical
- DBSCAN
- Gaussian Mixture Model
- Dimensionality Reduction

## RELEVANT PROJECTS

**Instacart Order Analysis** | GitHub | Medium

- Used machine learning techniques to segment users and predict order lag time.
- Used PySpark in conjunction with SQL commands to combine and transform data from six CSV files to create three data frames that better associated related information.
- **Tech:** PySpark, Pandas, Numpy, Seaborn, SciKit-Learn (K-Means, K-Nearest-Neighbor, Silhouette Coefficient, Principal Components Analysis)

**Segmenting NBA Players** | GitHub | Medium
- Used clustering algorithms with performance metrics to segment NBA players.
- Calculated silhouette coefficients to measure intra-cluster similarity to select optimal clustering algorithm from Naive Bayes, K-Means, Random Forest, and Gradient Boosting.
- **Tech:** Pandas, Numpy, Seaborn, SciKit-Learn (K-means, Silhouette Coefficient, UMAP)

**Predicting NBA All-Stars** | GitHub | Medium
- Used predictive algorithms with performance metrics to predict NBA All-Star selection.
- Implemented Synthetic Minority Over-Sampling TEchnique, or SMOTE, to counteract the effects of class imbalance, as ~95% of the observations belonged to one class.
- **Tech:** Pandas, Numpy, Seaborn, SMOTE, SciKit-Learn (Random Forest, Gradient Boosting)

## PROFESSIONAL EXPERIENCE

**Advanced Micro Devices** | Austin, TX | January 2008 - August 2018

**Silicon Debug Lead** | 2018
- Managed technical issues originating internally or reported by the customer.
- Coordinated debug efforts across technical and business organizations, ensuring all requirements were gathered and all stakeholders were updated on the current status.
- Recognized with a Spotlight Award for enabling on-time delivery of engineering samples to the customer while under a significant time crunch and overcoming infrastructure delays and software limitations.

**Product Engineer** | 2013 - 2018
- Executed product performance characterization and spearheaded failure investigation.
- Triaged product engineering issues, prioritizing by impact, and driving execution.
- Recognized with multiple Spotlight Awards for debugging and resolving significant yield fallout on semi-custom products with IP co-developed with external customers.

**SCAN Engineer** | 2012 - 2013
- Validated SCAN patterns, executed pattern characterization, and debugged failures.
- Generated and executed test plans for SCAN pattern bringup and production integration.
- Coordinated with designers to root-cause, fix, or work-around bugs found in patterns.

**SLT Engineer** | 2008 - 2012
- Measured per-application performance for characterization and production integration.
- Implemented application reliability and performance measurement flows in Ruby.
- Recognized with Spirit of Success Award for enabling accelerated production enablement of first-ever CPU+GPU microprocessor solution.

## EDUCATION

- **Thinkful** | Data Science | June 2020
- **University of Texas** | Bachelor's of Science | Electrical Engineering | December 2007

## AWARDS

- **Executive Spotlight Award** | AMD | 2016
- **Spotlight Award** | AMD | 2018, 2016, 2008
- **Spirit of Success Award** | AMD | 2012