Adam C. Yang

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Electrical engineer with experience harnessing data in the development of semiconductor devices. Currently developing technical skills at UC Berkeley to fulfill aspirations of transitioning to a data science and machine learning role.

Education

University of California, Berkeley Expected Graduation: Summer 2019
Master of Information and Data Science GPA: 4.00/4.00

- **Experiments and Causality –** Designed and conducted a controlled field experiment to determine the effects of political news articles on stress.
- **Applied Machine Learning –** Utilized random forest machine learning model to tackle the "Google Analytics Customer Revenue Prediction" problem on Kaggle.
- **Machine Learning at Scale –** Implemented word count on a large text and composed a Naïve Bayes algorithm to classify spam mail using Hadoop MapReduce. Utilizing Spark and a MapReduce framework, I established an algorithm to detect synonyms, applied gradient descent to supervised learning algorithm to predict wine quality, and generated a PageRank algorithm. The final project involves predicting advertisement Click-Through-Rate based on a Kaggle competition by Criteo.
- **Natural Language Processing** – Created custom word embeddings based on raw text data from Reddit. Then built a sentiment model based on biased political embeddings to analyze each group's difference of opinion on certain topics and people.

Georgia Institute of Technology Graduated: Dec 2015
Master of Science, **Electrical Engineering** GPA: 3.80/4.00
Minor in **Computer Science**

University of Illinois at Urbana-Champaign Graduated: May 2014
Bachelor of Science, **Electrical Engineering** GPA: 3.53/4.00

- *Graduated with Honors*
- *Dean's List*

Experience

International Business Machines (IBM)
Product Yield and Characterization Engineer March 2016-Present

Oversee SRAM related defect monitoring and analysis. Responsibilities include tracking and monitoring SRAM yield and analyzing bit fail maps to diagnose chip and wafer level electrical fails. Conduct extensive data mining for correlations and trend analysis to isolate device flaws and improve product yield. Coordinate daily with multiple engineering teams in the microprocessor design and fabrication process to communicate findings.

- Implemented a Python and SQL based algorithm to identify and track "fin residue" fail signatures on product wafers.
- Discovered and diagnosed multiple defect signatures that impact in-line SRAM yield through data analysis.
- Discovered and investigated discrepancies in the critical dimensions of device gate and its impact on low voltage yield loss. This resulted in a drastic improvement of low voltage 4 Meg SRAM yield and fixed a systematic defect in the lithography process.

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- Analyzed the impacts of device gate height to yield and metrology parameters to help evaluate whether the increased performance justifies the potential yield loss.
- Tracked and analyzed large defect signatures which revealed silicon oxidation occurring during the gate contact etch process as the wafers sit too long in the FOUP. This discovery and fix resulted in a 20% SRAM yield increase.

PSYONIC Biotechnology (Bretl Research Group)
Research Assistant April 2015-July 2015

- Designed, tested, and improved prototype variations of electromyography (EMG) circuits for robotic prosthesis control and documented specifications of how the circuit needs to be built to behave appropriately.
- Experimented with Bipolar and Unipolar power supplies as well as designing various EMG circuits to minimize noise
- Designed and experimented with circuits for pressure sensors to be used in prosthetic fingers for tactile feedback via electrical stimulation to the user
- Worked with a team to develop low cost robotic prostheses for amputees with the capability of recreating tactile feedback and proprioception

Senior Design Project (University of Illinois at Urbana Champaign). Spring 2014

- Led a team that designed and built an intuitive hand-motion based glove controller for a commercial closed-sourced quadcopter as well as a track and follow system between the quadcopter and the glove controller.
- Demonstrated extensive soldering, Arduino programming, PCB design on Eagle, as well as numerous hands-on skills required to design and test the circuit.

Skills

***Computer Skills*:** Have project experience in Python, R, Spark, Hadoop MapReduce, SQL, JMP, Git, MATLAB, C, LC-3, Processing, Java, Arduino language, Unity 3D, and VHDL programming onto an FPGA as well as PCB design on Eagle CAD software.

Data Skills: Have experience with data preparation, designing and conducting a controlled experiment, and presenting and communicating the findings in a team environment.

***Language Skills*:** English (native), Mandarin (native), Thai (fluent), Spanish (intermediate).

Leadership Experience and Awards

Chi Sigma Tau Fraternity – Vice President, National Board Liaison, Secretary, etc. 2010 - 2014
Dale Carnegie Leadership Training Summer 2010
Boy Scouts of America Eagle Scout 1998 - 2010