

# DAVID RANGEL ALARCON

SOFTWARE ENGINEER

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## EDUCATION

**University of California Los Angeles**

Sep 2017 - Dec 2018

Masters ♦ Computer Science

GPA: 3.74

**University of California Davis**

Sep 2010 - Jun 2014

Bachelors of Science ♦ Electrical Engineering

## WORK EXPERIENCE

**Performance Star**

Feb 2019 - Current

*Software Engineer*

*Santa Clara, CA*

- Worked on an intelligent recipe generator for chemical vapor deposition equipment. Recipes are command sequences generated from a user's intent; their desired process, tool, and yield goals.
- Created an SQLite3 database and python/prolog interfaces for shared data.
- Refactored and added test code for a flask web app back-end. The python3.7 back-end stored a state for a user, and generated an interactive pareto front for the user to select their desired yield goals.
- Unified separate code bases into a single source repository with the same database and Flask application, to make the application shippable as a docker image.
- Optimized and generalized a prolog search problem which synthesized the recipe order.
- Developed a flask web app dev tool for visualizing and stepping through the prolog search problem.

**Keysight Technologies**

Jul 2014 - Sep 2017

*New Product Introduction Electrical Engineer*

*Santa Rosa, CA*

- Developed calibrations and tests in C# for spectrum analyzers and signal generators; alc control, signal to noise, RF gain, spur searches, filter roll off, etc.
- Reviewed prototypes and specified modifications to fix bugs stemming from hardware and software design.
- Optimized signal generator performance by benchmark testing and analyzing data using Python and C#.
- Saved days of engineering time by implementing a sharable spur search and classifier library for signal generators.

## PROJECTS

**Bayesian Inference on Medical ICP Data**

- Generated a methodology to find time versus accuracy trade-off of noisy alarm waiting periods.
- Built a 5-fold cross-validation classifier pipeline for parameter testing discriminant analyzers in Matlab.
- Modeled the time based decision using a hidden markov model, trained in Matlab with the BayesNet library.

**Generating Adversarial Examples - Madry Lab MNIST Challenge**

- Presented a new adversarial attack that reduced a defending networks accuracy from 98.4% to 89.77%.
- Conceptualized a derivative of gradient attack, ours perturbs the main component of the gradient vector.
- Evaluated the attack in python using tensorflow and Goodfellow's attack libraries for baselines.

## SKILLS

**Computer Languages**

Python, C#, C, Matlab, Java, MySQL, Prolog, Lisp, HTML, Javascript, webPPL

**Software & Tools**

Visual Studio, TFS, Git, SVN, Docker, Sublime, LaTeX, Linux, Microsoft Office

## RELEVANT COURSES

Operating Systems

Current Topics NLP

Algorithms & Complexity

Bayesian Networks

Matrix Analysis

Problem Solving & Search

Compiler Construction

Machine Learning Algorithms

US Citizen, Speaks Spanish