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Marc A. Leef

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Education

M.Eng. ***Computer Science*** **Princeton University** **September 2015 – June 2017**
- GPA: 3.86;

B.S. ***Computer Science*** **University of Oregon** **September 2011 – June 2015**
- Cum Laude Honors; GPA: 3.85; Minor: Biology

Employment

Software Engineer **Google** **September 2017 – Present**
- Currently working on Search Ad Bid Optimization. C++. Previously worked on the core Google Cloud monetization system which was primarily responsible for costing usage of all GCP products using custom pricing structures, applying relevant discounts and credits, and validating accounting results. Java, C++.

Software Engineering Intern **Pinterest** **June 2016 – September 2016**
- Created predictive models to assess user engagement levels with Pins from different content categories (Topics).
- Created Topic Bandit, a system that learns and reacts to users' affinities for different Topics and tunes the proportions of Pins they see from those Topics accordingly. Leveraged Thompson Sampling to solve the Multi Armed Bandit problem and Java, Hive, Cascading, and Thrift to facilitate a recommendations feedback loop.

Teaching Assistant **Princeton University** **September 2015 – June 2017**
- Leading discussions, holding office hours, and grading exams/assignments for Operating Systems, Data Structures & Algorithms, and Introduction to Computer Science courses.

Software Engineering Intern **Amazon Web Services** **June 2015 – September 2015**
- Designed and implemented a distributed caching layer atop a Node.js backend using Javascript, the AWS SDK, and Elasticsearch. This decreased client-side latency by up to 90% and enabled efficient searching for customers' AWS resources.
- Implemented an easy way to simulate the performance effects of the largest AWS customers (Netflix, Dropbox, etc.) on my team's backend and frontend services.

Bioinformatics Intern **Affymetrix** **June 2014 – September 2014**
- Developed Affymetrix Probe Set Search (*github.com/mleef/PSS*), a software tool for assessing the design-specific probe coverage of mRNA sequences, created using a combination of Node.js, C++, and Python.

Technical Experience/Projects

- **LPIC: Locally Parallel Index Construction** (2016 – *github.com/mleef/LPIC*). Parallel inverted-index construction and interactive querying. Go.
- **RareItemsetMining** (2016 – *github.com/mleef/RareItemsetMining*). Combines Apache Spark Streaming and implementations of both Frequent Pattern Tree construction and growth algorithms to perform efficient and flexible rare and frequent item set mining on large data streams. Java.
- **ML-Server** (2015 – *github.com/mleef/ML-Server*). RESTful API for constructing and querying machine learning models. Supports Perceptron, Naive Bayes, and Decision Tree classifiers as well as user authentication, token generation, and an account management system. Java, MySQL.
- **Markovian** (2015 – *github.com/mleef/Markovian*): Lightweight Markov Network library. Supports brute force and variable elimination partitioning as well as loopy belief propagation. Java.

Languages and Technologies

- Java, Go, JavaScript, Python
- Apache Spark/Thrift/Hive/HBase, Cascading, MySQL, Elasticsearch, Node.js, AngularJS