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EXPERIENCE

CHARTBEAT INC.

HEAD OF BACKEND ENGINEERING

October 2016 – Present

- Built a replicated C++ key-value store capable of writing over 500k records/sec and computing arbitrary views on stored data defined at runtime via Lua. Persisted data in a LMDB copy-on-write b-tree that supports transactions, snapshots, multiple non-blocking readers + single writer, and scales reads linearly with number of CPUs. Used Chain Replication to persist data across nodes
- Built "Miata", a convenient real-time streaming analytics framework for prototyping products built from Chartbeat's data firehose. Framework synthesized high-throughput ZeroMQ, Kafka, and Python
- Led a team of 8 backend engineers across 4 product teams. Conducted weekly 1-on-1s with each team member and advised each on personal, team, and project development
- Modernized old Nagios reporting and alerting infrastructure

BACKEND TEAM LEAD

October 2015 – October 2016

- Led research and development team responsible for prototyping new and experimental products. Presented new research and products to the company board and communicated the state of active experiments
- Built "Goby", a dashboard for communicating the most engaging articles (by time) active within the Chartbeat news network at the present moment
- Developed share of voice benchmarking tool to aid publishers in measuring their contribution to a news topic
- Created real-time targeting platform for ad distributors to identify articles with high engagement
- Implemented Robust Principal Component Analysis (RPCA) outlier detection for surfacing anomalous traffic patterns in topics published on the Chartbeat network
- Taught a recurring Python language class covering advanced features of the language such as writing custom C extensions and debugging workflows

BACKEND DEVELOPER

August 2014 – October 2015

- Open-sourced Parselmouth, an object-oriented interface for abstracting away the ugly parts of ad server APIs
- Developed a Line Item Recommendation product that suggested new impression target goals that would facilitate hitting a defined engagement goal
- Built system for indexing screenshots of advertisement creatives over time
- Designed and contributed to many of Chartbeat's APIs

MOAT INC.

BACKEND DEVELOPER

May 2012 – August 2014

- Engineered a network of web crawlers capable of programmatically detecting, capturing, and indexing online advertisements across different geographical regions
- Designed ETL pipeline for aggregating warehoused index results
- Developed API for aggregate results and Pyramid web application for serving reports to clients
- Implemented homebrew heterogeneous server role and configuration deployment system in Amazon EC2

EDUCATION

CORNELL UNIVERSITY

BS IN ELECTRICAL AND COMPUTER ENGINEERING (ECE)

May 2012

- John McMullen Dean Scholar, Goldfarb Tradition Fellow

PROGRAMMING SKILLS

Expert: Python
Proficient: C++ • C • Java • Clojure • Shell • SQL • Redshift
Familiar: JavaScript • CSS • PHP

INTERESTS

Cooking • Surfing • Particle Physics
Fusion Engineering • Miyazaki Films
Ceramics • Aerospace Engineering • Music