

# Paul Kiernan

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## EXPERIENCE

### CHARTBEAT INC.

#### HEAD OF BACKEND ENGINEERING

October 2016 – Present

- Built "MrRoboto," a replicated C++ key-value store capable of writing over 500k records/sec and computing arbitrary views, defined at runtime, on stored data. 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 CPU cores. Used Chain Replication to persist data across nodes
- Built "Miata," a convenient real-time streaming analytics framework for prototyping products using Chartbeat's streaming data firehose using Kafka, ZeroMQ 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 research and new products to the Board and communicated the progress of active experiments to the company
- 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 and monetize 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
- Primary backend engineer behind "Loveboat," Chartbeat Advertising's V2 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

- Honors: John McMullen Dean Scholar, Goldfarb Tradition Fellow
- Slope Media Vice President of Production and Technology
- University Nanosat 6 Power Subsystem Engineer

## PROGRAMMING SKILLS

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

## INTERESTS

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

## LINKS

GitHub:// [paulkiernan](#)  
LinkedIn:// [paulYGON](#)  
Twitter:// [@gaelic](#)