Aron C. Atkins

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Profile

I am a software engineer who takes pride in solving difficult technical problems and building quality products on small teams. I bring a willingness to listen and understand business objectives and to work with my team to ensure that the design and implementation meet those needs. I have a strong background in mentorship and encourage a culture of personal responsibility.

I am drawn to companies with a strong technical core competency, where engineering teams own what they build and are responsible for development, testing, deployment and operation. I want to help strengthen those around me through mentorship and by setting a strong individual example. I am looking to join a company that will benefit from my experience developing, scaling, and operating high-quality distributed applications.

Experience

Software Architect, Brightcove, Inc., 2007 - November 2014

Brightcove is an online video platform. The company went public in February 2012 (BCOV).

Architect and team lead for an initiative to consolidate and scale storage for Brightcove's video solutions. Migrated millions of files and several petabytes of data into a new authenticated, distributed, and more cost efficient service. First year of operation resulted in savings of > $1M.

Helped build a video ingestion system that processes many terabytes of content daily. Designed and implemented distributed job scheduling algorithms to ensure "fair" processing when subject to resource constraints.

Developed a geographically distributed HTTP caching proxy layer supporting all Brightcove-powered video players. Services many hundreds of millions of API calls daily.

Part of a team that managed and operated a 150+ node distributed caching cluster containing hundreds of millions of records and approximately a terabyte of in-memory data. This cluster held database-backed objects and other derived information.

Introduced code reviews across the engineering organization. Encouraged engineers

take personal responsibility for the quality of the Brightcove services. This includes design, testing, performance, deployment, operations, and support.

First adopter of graphite (http://graphite.wikidot.com); developed tooling to extract measurements from a heterogenous application stack. Real-time graphs of application metrics used to inform service improvements. Helped establish a metrics-oriented culture.

Founder, Spotstory/Enormous Design Automation, 2006 - 2007

Founded two companies: Spotstory, a hyper-local community site; and Enormous Design Automation, a distributed, equivalence checker.

Responsibilities included application prototyping, development, deployment and service operation.

Developed http://a.placebetween.us, a map-based meetup tool.

Senior Software Engineer, Carbon Design Systems, Inc., 2003 - 2006

Carbon provides high-speed circuit simulators.

Delivered a series of performance improvements through traditional compiler optimizations and invented algorithms. All improvements were investigated, developed, and tuned over a large test suite.

Analyzed customer hardware designs to identify simulation performance bottlenecks. Developed compiler improvements addressing these findings.

Responsible for writing and maintaining dependency information, graphs, and other core building blocks. Used these pieces to write several global analysis passes.

Principal Software Engineer, iPhrase Technologies, Inc., 1999 - 2002

iPhrase provides natural language enterprise search. iPhrase was acquired by IBM in November 2005.

Team lead and manager to 4 other engineers. Responsible for major subsystems including the application server, reporting, system verification, and general infrastructure.

Instituted a number of software engineering practices including coding style, bug tracking, checkin tests, nightly regression testing, bug verification and design, code and buddy reviews.

Responsible for release engineering including building, packaging, and delivering product releases for both internal and external consumption. Administered code management and bug tracking systems. Helped coordinate multi-version release efforts. Implemented an early company intranet.

Team member, then team lead responsible for delivering a search solution for the

Charles Schwab (https://schwab.com) customer site. Provided support to the customer project team. Shared on-call duties. Developed testing, packaging, and seamless deployment tools.

Developed a number of early customer prototypes and sales aids.

Software Engineer, Chrysalis Symbolic Design, Inc., 1996 - 1999

Chrysalis provided formal tools to the semiconductor industry. Chrysalis was acquired by Avanti Corporation in August 1999. Avanti was purchased by Synopsys (SNPS) in 2002.

Part of a small team which developed, matured, and maintained Chrysalis' chief product, Design VERIFYer, a formal equivalence checker.

Responsible for the development and maintenance of core data structures and algorithms. Architected and implemented a compact, efficient method for storing and operating on logic equations. Designed and developed new logic comparison algorithms. Involved in the prototyping, specification and design of a high-level intermediate design representation.

Wrote a replacement for the memory subsystem, improving allocation reuse and dramatically reducing the total process footprint. Moderate performance improvements were also observed.

Assistant System Administrator, Chrysalis Symbolic Design, Inc., summer 1996

Responsible for the administration and maintenance of a network of more than 100 workstations in a production environment with more than 8 UNIX variants. Wrote scripts to automate tasks. Installed and upgraded software. Responded to user issues.

Education

Worcester Polytechnic Institute, M.S., Computer Science, 2006.

Worcester Polytechnic Institute, B.S., Discrete Mathematics with Computer Science Minor, 1996.

Budapest Semesters in Mathematics, Participant, Fall 1995 Semester.

Cathedral High School, 1992.

Publications

Atkins, A.C., G.N. Sarkozy and S.M. Selkow. "Counting Irregular Multigraphs." Discrete Mathematics 195. 1999. pp. 235-237.

Atkins, A.C., H. Fink and J. Spaleta. "Imaging Underwater Objects with Ambient Noise".

The UMAP Journal. Vol. 17, No. 3. 1996. pp. 255-272.

Atkins, A.C. "Maximal k-Cobras", WPI Project Report. 1996.

Atkins, A.C. and G. Gallagher "Cooperative Learning in the Calculus Classroom", WPI Project Report. 1995.

RECOGNITION

"Maximal k-Cobras" recognized as an outstanding undergraduate research project by Sigma Xi, a national research society. 1996.

"Maximal k-Cobras" awarded Honorable Mention by WPI Department of Mathematical Sciences. 1996.

"Imaging Underwater Objects with Ambient Noise" judged Outstanding. COMAP Mathematical Contest in Modeling. 1996.

"Intersections of a Single Helix and a Plane" judged Meritorious. COMAP Mathematical Contest in Modeling. 1995.

"The Traveling Salesman Returns Home" judged Outstanding. Burlington AMS/MAA national Mathfest. 1995.

Presented "The Traveling Salesman Returns Home". WPI Department of Mathematical Sciences Colloquium. 1995.