ALEXANDER M. MILKOV

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OBJECTIVE

Self-taught developer specializing in functional programming. Domain interests include machine learning, finance, and blockchain, among others. However, willing to work in any language paradigm or domain. Seeking to provide solutions to unique and nuanced problem spaces in systems that maximize performance, scalability, and maintainability simultaneously

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia *Jan 2015 – May 2017 (on hold, 4 classes to go)*

M.S. Computer Science

- Computing Systems Track
- GPA: 3.8

B.S. Industrial and Systems Engineering *Aug 2011 – Dec 2014*

- Economic and Financial Systems Track
- Computer Science GPA: 3.6

WORK EXPERIENCE

The Weather Company (IBM), *Senior Software Engineer,* Scala *January 2019 – present*

- Rearchitecting multi-tenant alerting system: ingest client API into Kafka and a state machine/pipeline that fetches content templates persisted in Redis (with an client API to manage them), populates them from data in pulled Kafka messages and distributes them via some messaging platform depending on recipient APNS (iPhone push notifications), FCM (Android push notifications) etc
- Built service that consumes transaction receipts generated by distribution service, stored in SQS and writes them to legacy Cassandra keyspace used to run reports/analytics on alerting transaction. Receipts denoting bounce failures from messaging platforms are queued to disable the now invalid subscriptions in our profile system

Comcast, *Senior Software Engineer (Contractor),* Scala *June 2018 – December 2018*

- Working on fullstack system (Scala.js + React bindings, Scala backend) that is responsible for remotely managing the configuration of hundreds of thousands of networking devices which will be rolled out as part of a wider architecture overhaul initiative

The Weather Company (IBM), *Software Engineer,* Scala *Sep 2016 – Aug 2018*

- Responsible for developing and maintaining user profile system (1M req/sec peak) that manages all user data such as subscriptions, locations, and device endpoints.
- Responsible for developing and maintaining alerting system, which fetches user subscriptions, populates content templates, and distributes them to devices.
- Built service that computes scores indicating degree of flux of relevant weather forecast indicators such as temp and precip over a given time interval. Scores outside thresholds prompt delivery of flux push alerts to subscribing users. Built out AWS architecture for said service including caching, monitoring, and deployment pipeline
- Built historical observations service for all Samsung smart phones on a tight deadline. Service required two-part pub/sub caching architecture: Large scheduled S3 file dump into Redis and client-side API to read from Redis
- Contributed to legacy weather data service handling 120K req/sec
- Built small service in Haskell and then Clojure (as a learning experience) to fetch data out of Cassandra
- Code review all deployments and main functional programming evangelist in the B2C group my team belongs to

The Home Depot, *Contracted Developer,* Java *Jan 2016 – Jul 2016*

- Responsible for creating and maintaining Spring services architecture interconnecting business components and bridging them into Manhattan's warehouse management software
- Managed deployments and subsequent health of services across all lifecycles

PROJECTS

Confide (Haskell): Generically decode record types from HOCON config file using GHC.Generics
Mon (Scala): Metrics management architecture and associated metric client implementations
Prelude Utilities (Scala): Components like caching, http, error representation, etc. common to most Scala services
Validen (Scala): A generic case class validator designed to alleviate programmatic validation by encoding validator schemas in a simple spec language with a corresponding AST. Perfect for static JSON validation for example

SKILLS

Languages (in order or comfort): Scala, Haskell, Java, Clojure, JavaScript, Python, Bash
Frameworks/Ecosystems: Scala.js, React
Technologies: Linux, MongoDB, Git, AWS, Datadog
Concepts: Functional Programming, Algorithms, Category Theory, Databases, Scrum
Coursework: Computer Networking, Software Development Process, Machine Learning for Trading, Information Security, Database Systems, Software Analysis & Test, Network Security, Cyber Physical Systems, Big Data for Health Informatics

COMMUNITY INVOLVEMENT

LambdaConf, Attendee *June 2018*

Atlanta Scala Meetup, Host/Presenter: *Effect Abstraction with Applications In Scala* *April 2018*