

Alexander Huras

Hi There!

I find patterns and solve problems.

I'm continually seeking **interesting**, and **challenging** work, with people who share that goal. I have a broad collection of experience that spans industries and disciplines with a recent focus on distributed systems, functional programming, and statistics. My ideal team is one where I can learn at least as much as I can teach.

Skills

Languages	Scala, Python, Erlang, Julia, Haskell	Platforms	Hadoop, Aurora + Mesos, Unix, AWS
Tools	Scalding, Finagle, Storm, NumPy, Thrift	Interests	Functional Programming, Idris, Applied Statistics, Linear Algebra

Experience

August 2014 **Twitter Inc.**, *Software Engineer (Ads Data Infrastructure)*, San Francisco, CA.

- I've worked on search engines, federated databases, and a large scale timeseries reporting system, with a primary focus on interactive ad-campaign performance forecasting. I've written numerous Scalding jobs, and substantially contributed to many revenue-critical production systems deployed on thousands of nodes. I worked primarily in **Scala**, and **Python** (with some Java thrown in); and developed an addiction to functional programming along the way. I've guided complete system lifecycles, from deprecating and shutting down large legacy projects, to designing their newer, sexier replacements. I have personally deleted tens of thousands of lines of old/crufty code. I consistently give excellent code reviews (references available upon request).

Spring 2013 **Facebook Inc.**, *Product Analytics Intern*, Menlo Park, CA.

I munged data, and conducted/analysed experiments for what is now the Growth/Messages analytics team, I had ownership of the Push Notification data pipelines. My most significant contribution was a large refactor/redesign of a legacy reporting pipeline—the result ran an order of magnitude faster, using 20% of the resources.

Fall 2012 **Magnetic Inc.**, *Data Engineer*, New York City, NY.

I built multiple analytics, and modelling pipelines with **Hadoop**, **Pig**, **AWS** and various flavors of **Python**. Additionally, I built some NLP tools targeted at assessing search data quality. All of which are happily operating in production.

Winter 2012 **SkyGrid Inc.**, *Software Engineering Intern*, Sunnyvale CA.

As part of a small team I wore many hats. I contributed to the iOS codebase for Touchtv, a social TV app for iPad wherein I was responsible for Facebook and Twitter integration.

Spring 2011, **ITG Canada Inc.**, *Trading System/Compliance Analyst*, Toronto ON.

Fall 2010 During my first 4-month block at ITG, I used a combination of Excel, SQL, VBA and Ruby to provide generic compliance support for institutional trading activity. During my second block, I independently completely overhauled the existing trade compliance infrastructure in **SQL**—automating away the business case for hiring me in the first place.

Projects

2015 **Cacophony: Real-Time Audio Synthesis.**

This project was spawned from my desire to both learn a new language (Haskell), and write a low-level midi synthesizer. It deserves a place here not due to results; but rather the sheer number of false starts, language swaps; and general shenanigans that it took to realise that this sort of thing is actually difficult to get right. This project is currently halted until I can find sufficient time to fix/maintain a bunch of sound-related Haskell libraries (I'm looking at *you* portaudio, lib-sndfile, repa).

2013-2014 **Relay: Adaptive Traffic Control, SYDE 4B Design Project.**

Traffic is a significant problem in almost all urban areas. We designed a distributed traffic control system composed of single-intersection agents married to a modern traffic visualization application. I designed the control systems, network architecture, and incentive structures used in the project. The actors in the system (implemented in **Erlang/OTP**) operated as dynamic graph automata with consensus filters for loose synchronicity.

Winter 2014 **Attention: English Accent Classification, Research/Vision Quest.**

Speech recognition is hard, particularly given the wide gamut of accents (even for humans!). Using a variety of signal processing techniques, as well as some unsupervised learning, I developed a system which can (poorly) classify whether a speaker is a native to the language. The system was written in **Python** making extensive use of **SciKit Learn**, and **NumPy**.

Winter 2013 **divie: Friendly Asset Division, SYDE 3B Design Project, Waterloo ON.**

Divie is a generalised auction/assignment platform targeted at division-of-asset scenarios (such as divorce). Each user allocates a fixed budget towards items in a silent-auction-like manner. I architected the system, and designed an algorithm which distributes auction items so that the variance of loss across the stakeholders is minimized. The application was powered by **Flask**, **PostgresSQL**, and **Heroku**.

Fall 2012 **BufferBox Lock Addressing, BufferBox Inc., Waterloo ON.**

In partnership with BufferBox (YC'12)—a Waterloo-based logistics and delivery company (acquired by Google), we implemented the hardware aspect of the BufferBox platform using open-source components and software (Arduinos and LAMP). I worked primarily in **C++**.

Formal Education

2009-2014 **BASc, Hon. Systems Design Engineering, University of Waterloo, Canada.**

2005-2009 **IB Diploma and OSSD, Vaughan Road Academy, Toronto, Canada.**

Vices

Music Piano, Saxophone, Guitar, Didgeridoo
Improvisational Jazz

Fitness Running, Climbing, Cycling, Sailing

Computing Auctions, Markets, Synthesizers

Misc. Strategic Board Games, Cooking