# 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 in scientific programming within the domain of internet advertising.

## Expertise

| | | | |
|---|---|---|---|
| Languages | Scala, Python, Erlang, Elixir, Julia | Platforms | Hadoop, Mesos, Unix, AWS |
| Tools | NumPy, SciPy, CUDA, OpenCL, Theano, vim, Scalding | Interests | Auctions, Markets, Sound, Music, Analytics, Arbitrage, Linear Algebra |

## Experience

### Work

August 2014 - **Twitter Inc.**, *Software Engineer*, San Francisco, CA.
On the Ads Analytics team, I work on advertiser-facing infrastructure that predicts campaign efficacy. I also design tools for automated system characterisation (statistical or otherwise).

Spring 2013 **Facebook Inc.**, *Product Analytics Intern*, Menlo Park, CA.
I conducted **quantitative analysis**, and **designed statistical experiments** for the Notifications and Messages teams. Beyond interfacing with engineers and product managers, I additionally worked with the BI team—writing large data pipelines in **Hadoop** with **Hive**. 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 ad-performance reporting, data processing, and modelling pipelines leveraging **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. However, my most significant project used application-level JavaScript.

Spring 2011, Fall 2010 **ITG Canada Inc.**, *Trading System/Compliance Analyst*, Toronto ON.
During my first 4-month block at ITG, I used a combination of Excel, SQL, VBA and Ruby to provide meaningful data analysis and create historical models of ITG's 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. I was also partly responsible for maintaining the backend of MATCH Now: a Canadian dark trading venue, as well as getting on the phone with traders using the platform.

*mobile: 415.699.8293 • alex.huras@gmail.com • Github: athuras*

## Projects

2013-2014 **Relay: Adaptive Traffic Control**, *SYDE 4B Design Project*.
Traffic is a major problem in almost all cities, and adaptive traffic control systems work quite well in most environments—but they are notoriously expensive. We designed a distributed, geographically de-centralized traffic control system composed of single-intersection agents married to a modern traffic visualization application. In concert, all agents in the system partially coordinate to generate a large distributed predictive model of macro-traffic patterns. 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 synchroneity.

Winter 2014 **Attention: English Accent Classification**, *Research/Vision Quest*.
English Speach recognition is a difficult problem, particularly given the wide gamut of accents. Using a variety of signal processing techniques, as well as online clustering, I developed a system which can decide whether a speaker is a native to the language. The resulting system achieves a cross-validated F1 score of 0.79 using untuned SVMs. 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 Cycling, Running, Swimming, Sailing

Computing Auctions, Markets, Fractals, and GPUs

Misc. Strategic Board Games, Making Ice Cream, Risotto
Having Strong Opinions

*mobile: 415.699.8293* • *alex.huras@gmail.com* • *Github: athuras*